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MARIA EDGEWORTH'S

EARLY LESSONS.

VOL. I.

LITTLE DOG TRUSTY.

HARRY AND LUCY.

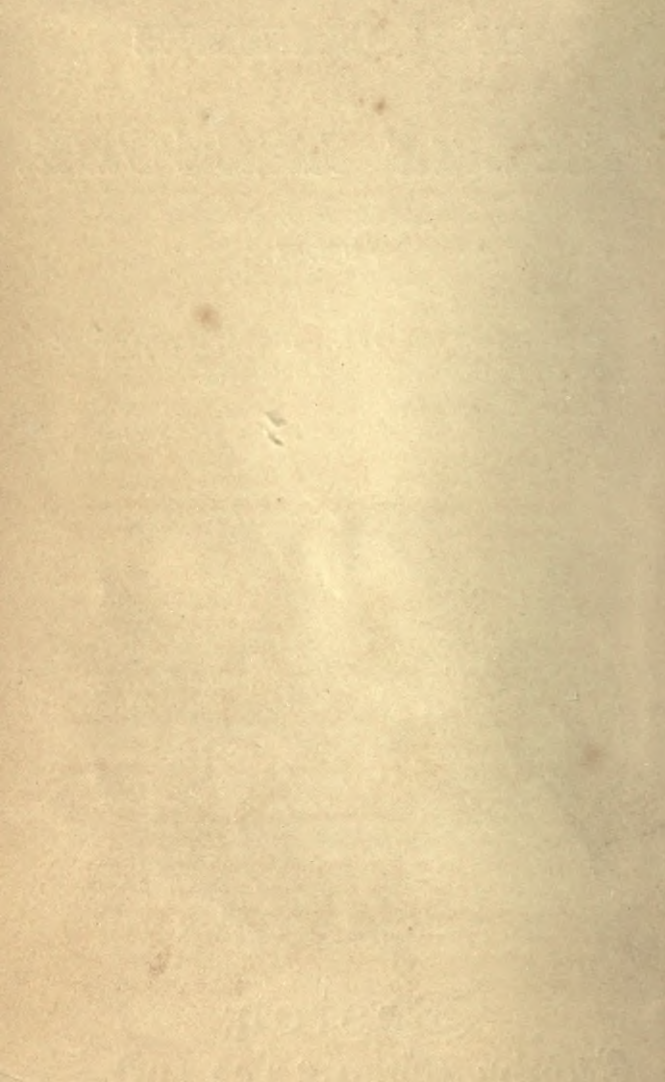
ORANGE MAN.

FRANK.

CHERRY ORCHARD.



Boston:  
Crosby, Nichols, Lee and Co.





# HARRY AND LUCY:

WITH THE STORIES OF

LITTLE DOG TRUSTY, THE ORANGE MAN,

AND

THE CHERRY ORCHARD,

AND

*In Address to Mothers.*

BY

MARIA EDGEWORTH

AUTHOR OF "FRANK," "ROSAMOND," "  
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# EDGEWORTH'S

## EARLY LESSONS.

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### ADDRESS TO MOTHERS.

IN offering these little books to those kind mothers, who attend to the early instruction of their children, the authors beg leave to prefix a few observations on early education, which have occurred to them, since the former parts of these books were published.

We found, to our high gratification, during a visit, which we lately paid to England, that the attention of parents, in every rank of society, was turned to the early education of their children.

Formerly, a child was left, during the first eight or ten years, to chance, in every part of its education, except its *book*, and keeping its clothes clean—the mother or the nursery maid attended to the latter, for their own sakes—the father, remembering the praises that had been bestowed upon himself, when he was a child, was anxious that his son should learn to read as soon as possible.

The object was to *cram* children with certain common-places of knowledge, to furnish them with answers to ready-made questions, to prove that the teachers, whether parent, schoolmaster, or private tutor, had kept the pupil's memory, at least, at hard work, and had confined his limbs and his mind, for many hours in the day to *study*.

At present, the attention of parents is more extended ; they endeavor to give their pupils reasonable motives for industry and application. They watch the tempers and dispositions of children ; they endeavor to cultivate the general powers of the infant understanding, instead of laboring incessantly to make them reading, writing, and calculating machines.

To assist them in these views, parents have now a number of excellent elementary books. Such a variety of these have of late years been published, that, by a proper use of them, more general knowledge can now be acquired, by a child, with two hours' daily application, than could have been acquired, fifty years ago, by the constant labor of ten hours in the four and twenty.

There are persons, who think that the ease with which knowledge is thus obtained, and its dispersion through the wide mass of society, is unfavorable to the advancement of science ; that knowledge easily acquired is easily lost ; that it makes scarcely any salutary impression upon the mind, impeding, instead of invigorating its native force ! they assert, that the principal use of early learning is to inure the young mind to application ; and that the rugged path of scholastic discipline taught the foot of the learner to tread more firmly, and hardened him to bear the labor of climbing the more difficult ascents of literature and science.

Undoubtedly, the infant mind should be inured to labor ; but it can scarcely be denied, that it is better to bestow that labor upon what is within the comprehension of a child, than to cram its memory with what must be unintelligible. A child is taught to walk upon smooth ground : and no persons, in their senses, would put an infant on its legs, for the first time, on rugged rocks.

It seems to be a very plain direction to a teacher, to proceed from what is known to the next step, which is not known ; but there are pedagogues, who choose the retrograde motion, of going from what is little known to



what is less known. Surely a child may be kept employed, and his faculties may be sufficiently exercised, by gradual instruction, on subjects suited to his capacity, where every step advances ; and where the universal and rational incentive to application, *success*, is perceived by the learner.

So far from thinking, that there is a royal road to any science, I believe that the road must be long, but I do not think it need be rugged ; I am convinced, that a love for learning may be early attained, by making it agreeable ; that the listless idleness of many an excellent scholar arises, not from aversion to application, but from having all the family of pain associated with early instruction. By *pain*, I do not merely mean the pain of corporal correction, or of any species of direct punishment. Even where parents have not recourse to these, they often associate pain indissolubly with literature, by compelling children to read that which they cannot understand. One of the objects of this address to mothers is to deprecate this practice, and to prevent this evil in future. Let me most earnestly conjure the parents and teachers, into whose hands these little volumes may come, to lay any of them aside immediately, that is not easily understood ; a time will come, when that which is now rejected may be sought for with avidity. I am particularly anxious upon this subject, because we have found, from experience, that *Early Lessons* are not arranged in the order, in which, for the facility of the learner they ought to be read. In fact, the order, in which they were first published, was the order of time in which they were written, and not of the matter which they contained. The first part of *Harry and Lucy* was written by me thirty-four years before *Frank and Rosamond* were written by my daughter. *Frank* is the easiest to be understood, and should therefore have come first ; after *Frank*, the first part of *Harry and Lucy* ; then *Rosamond* ; and, lastly, the second part of *Harry and*

Lucy, which was written long after the first part had been published. This latter part should not be put into the hands of pupils before they are eight years old. We have heard children say, '*We love little Frank, because it is easy ; but we hate Harry and Lucy, because it is difficult.*' We defer implicitly to their opinion ; well educated children are, in fact, the best judges of what is fit for children. Moliere's hackneyed old woman was not so good a critic of comedy, as a child of eight years old might be of books for infants.

Whenever, therefore, a child, who has in general a disposition for instruction, shows a dislike for any book, lay it a side at once, without saying anything upon the subject ; and put something before him, that is more to his taste. For instance, in the following little books, different parts of them are suited to the tastes of different children, as well as to children of different ages. It is therefore strongly recommended to parents, to select what they find upon trial to be the best for their immediate purpose, and to lay aside the rest for another opportunity. We have repeatedly heard parents and teachers complain of the want of books for their pupils ; can there be a better proof of the general improvement, that has taken place of late years, in the modes of instruction, than this desire for early literature. When I was a child, I had no resource but Newbury's little books and Mrs. Teachum ; and now when every year produces something new, and something good, for the supply of juvenile libraries, there is still an increasing demand for children's books. In a selection of this sort, teachers of prudence and experience are cautious not to be deceived by a name, or by an alluring title-page ; they previously examine what they put into the hands of their scholars ; they know that want of information in a child is preferable to confused and obscure instruction ; that, for their pupils to know any one thing well, and to be able to convey to others in appropriate language, the little knowledge which they may have

acquired, is far preferable to a string of ready-made answers to specific questions, which have been merely committed to memory ; that an example of proper conduct, of a noble sentiment, the glow of enthusiasm, raised by a simple recital of a generous action, have more influence upon the tempers and understanding of children, than the most pompous harangues of studied eloquence.

In choosing books for young people, the enlightened parent will endeavor to collect such as tend to give general knowledge, and to strengthen the understanding. Books, which teach particular sciences, or distinct branches of knowledge, should be sparingly employed. In one word, the mind should be prepared for instruction ; the terms of every art and every science should, in some degree, be familiar to the child, before anything like a specific treatise on the subject should be read. It is by no means our intention to lay down a course of early instruction, or to limit the number of books, that may, in succession, be safely put into the hands of the pupil. Mrs. Barbauld's 'Lessons for Children from three to four years old,' have obtained a prescriptive pre-eminence in the nursery. These are fit for a child's first attempts to read sentences ; and they go on, in easy progression, to such little narratives as ought to follow. Her eloquent hymns may next be read. They give an early taste for the sublime language and feelings of devotion. Scriptural stories have been selected in some little volumes : these may succeed to Mrs. Barbauld's hymns. No narrative makes a greater impression upon the mind than that of Joseph and his brethren :—not the *story* of Joseph, expanded and adorned by what is falsely called fine writing ; but the history of Joseph in the book of Genesis.

When children can read fluently, the difficulty is not to supply them with entertaining books, but to prevent them from reading too much and indiscriminately. To give them only such as cultivate the moral feelings, and create a taste for knowledge, while they, at the same

time, amuse and interest. A few, and *quite sufficient for this purpose*, may be named ; for instance, ' Fabulous Histories ;' \* ' Evenings at Home ;' ' Berquin's Children's Friend ;' ' Sandford and Merton ;' ' Little Jack ;' ' The Children's Miscellany ;' ' Bob the Terrier ;' ' Dick the Pony ;' ' The Book of Trades ;' ' The Looking-glass, or History of a young Artist ;' ' Robinson Crusoe ;' ' The Travels of Rolando ;' a book which I mention with some hesitation, because, though it contains much knowledge, collected from various authors, yet it is too much mixed with fiction. ' Mrs. Wakefield on Instinct' I name with more confidence, because the facts and the fiction are judiciously separated ; so that the reader is in no danger of mistaking truth for falsehood. To this juvenile library, perhaps, may be added *parts* of ' White's Natural History of Selbourne ;' and *parts* of ' Smellie's Philosophy of Natural History.'

These books are not here named in the order in which they should be read ; that must vary according to the tastes and capacities of the pupils, and according to various accidental circumstances, which it is impossible to foresee or enumerate. But here it is necessary to observe, that scarcely any one of these books will probably be suited, in every part, to any child. Children should not be forced to read a book *through*, but suffered to pass over what they do not understand, and to select that which suits their tastes, which will generally be found to be what they perfectly comprehend. There is no danger that this permission should lead to a taste for desultory reading, if the pupils are confined to a certain collection of books. They will, at different ages, and as their knowledge enlarges, recur to those parts of the books which they had rejected ; and, the taste for reading increasing, they will, in time, become perfectly acquainted

[ \* This excellent work has been published by Munroe & Francis, under the title of the ' Robins : or Fabulous Histories ;' also new and ornamented editions of ' Berquin's Children's Friend ;' ' Sandford and Merton ;' ' Robinson Crusoe ;' Barbauld ; &c. &c ]



with everything worth attention in their juvenile library. —For instance, that excellent work, 'Evenings at Home,' contains lessons and narratives, suited to different capacities, from seven or eight, to twelve or thirteen years of age. It would be highly injurious to the work and to the young readers, to insist, or even to permit, that the whole should be perused at an age, when the whole cannot be understood. The same may be said of 'The Children's Friend,' and 'Sandford and Merton,' the last volume of which is suited to young men at college; while parts of the first two are fit for children of seven or eight, and other parts for ten or twelve years old. In these books, the selection may be safely trusted to the young readers; in others, the selection must be made by the parent or teacher: for instance, in 'Smellie's Philosophy of Natural History,' where there will be found many entertaining and instructive facts, suited to children from eight to ten years, mixed with a great deal, both of what they cannot understand, and of what they ought not to read.

The 'Book of Trades' we have just mentioned as a most useful book, and it should always precede Joyce's 'Scientific Dialogues.' Mr. Joyce has contributed much to the ease of scientific instruction; and parents should do the author the justice not to put his books too early into the hands of children.

But no book, on scientific subjects, that has yet fallen into our hands, exceeds Mrs. Marcet's 'Chemical Dialogues.' Some of the facts which it contains will undoubtedly be remembered; but it is not for the chemical facts, that this book is so highly valuable, as for the clear and easy reasoning, by which the reader is led from one proposition to another. I speak from experience: one of my children had early acquired such an eager taste for reading, as had filled her mind with a multitude of facts, and images, and words, which prevented her from patient investigation, and from those

habits of thinking, and that logical induction, without which, no science, nor any series of truths, can be taught.' The 'Chemical Dialogues' succeeded in giving a turn to the thoughts of my pupil, which has produced the most salutary effects in her education. Romantic ideas, poetic images, and some disdain of common occupations, seemed to clear away from her young mind; and the chaos of her thoughts formed a new and rational arrangement. The child was ten years old at the time of which I speak, and from that period her general application has not been diminished, but whatever she reads, poetry, history, belles lettres, or science, everything seems to find its proper place, and to improve whilst it fills her mind. There is still wanting a series of little books, preparatory to Joyce's 'Scientific Dialogues.' No attempt, humble as it may appear, requires so much skill or patience, nor could anything add more effectually to the general improvement of the infant understanding than such a work. The elementary knowledge, which such books should endeavor to inculcate, must be thinly scattered in entertaining stories; not with a view to teach in play, but with the hope of arresting, for a few moments, that volatile attention, which becomes tired with sober, isolated instruction.

Some years since, I wrote 'Poetry explained for Children,' and I have found it highly useful in my own family. It has not, however, been much called for. It is, therefore, reasonably to be supposed, that it has not been well executed. Such a book is certainly wanting; and if it became popular, it would be of more service in education, than parents are well aware of. Nothing is earlier taught to children than extracts from poetry; they are easily got by heart. If a child has a tolerable memory, a good ear, and a pleasing voice, the parents are satisfied, and the child is extolled for its recitation. Nine times out of ten, the sense of what is thus got by rote is neglected or misunderstood, and the little actor acquires the

pernicious habit of reading fluently and committing to memory what it does not comprehend. There is still something worse in this practice. The understanding is left dormant, while the memory is too much exercised ; whereas the object most desirable is to strengthen the memory, *only* by storing it with useful and accurate knowledge.

Parents are usually anxious to teach history early. This should not be done at all, or should be done with great caution. There are certain well known volumes of Mrs. Trimmer's, with prints of Grecian, Roman, and English history, which are useful to impress the principal facts, in history, on the minds of children ; and we have lately met with some *tiny* volumes, under the name of Alfred Mills\* ' Pictures of English, and of Roman, and Grecian History.' The miniature prints in these are far superior to what are usually met with in such books ; and the language, and selection of the facts, in these miniken histories are, in general, excellent. Abridgments of history, such as Cooper's short Histories of England and France, Goldsmith's of Greece and Rome, Lord Woodhouslee's excellent book, or any others, which merely give the events, without mixture of political reflections, may be read between the ages of eight and ten ; but it is absurd to put Hume, Robertson, Macauley, Gibbon, or any of our philosophical historians' works, into the hands of children. All that should, or can be done, effectually, is to give the young pupils a clear view of the outline of history, and to fix in their memories the leading facts in the proper order of time. For this purpose, there are several genealogical and historical charts, that may be useful, even at the early age of nine or ten :—Le Sage's chart contains the fullest, and Stork's ' Stream of Time' by far the clearest view of chronology and his-

\* There is an odd omission, which should be noticed, in Mr. Alfred Mills' tiny history of England—he omits the *life*, and records only the *death* of Charles I.

ory. There are some careless omissions in these, which will probably be remedied in future editions. Priestley's Charts of History and of Biography can never be obsolete—To me, his Chart of history is not so clear either as Le Sage or as the Stream of Time; but I hear from those, whose judgment I respect, that it conveys to their minds a clear and comprehensive view of its subject.

For the purpose of fixing in the minds of children a few of the leading facts of history, chronology and geography, I think, the technical help of what is called artificial memory may be safely employed. The succession of Roman emperors, of English kings, the large geographical divisions of the world, the order of the principal inventions and discoveries—such as those of gunpowder, printing, and the mariner's compass; the discovery of America, and of the passage to India by the Cape of Good Hope, &c. may be chronologically stored in the memory, without injury to the understanding. Without encumbering the recollective faculty, twenty or thirty of Gray's *memorial lines* may, when selected, be easily committed to memory. They should be recited merely as jargon, till they are perfectly learned by rote; then the use of the letters, in the terminations of the words, which express the dates, should be explained, and the pupil should be practised in the use of these: they should be frequently referred to, in conversation; the children should be called upon, and made ready in the use of their numerical symbols, and, at the same time, made sensible of the advantage of the knowledge they have thus acquired.

Any farther than this, I would avoid technical memory. Among the ancients, it might, in some degree, supply the want of printed books of reference; but, in our days, when knowledge of every sort, that has been hitherto acquired, may be immediately referred to, in every common library, or in the shop of every bookseller, it is needless to load the memories of children with answers to



every possible question in geography and history, and with all such learning as is to be found in *task books*.

Before I quit the subject, I may be permitted to suggest to those who are composing, or who intend to compose elementary books for children, that what is purely didactic, and all general reflections, ought, as much as possible, to be avoided. Action should be introduced.—Action ! —Action ! Whether in morals or science, the thing to be taught should seem to arise from the circumstances in which the little persons of the drama are placed ; and on the proper manner, in which this is managed, will depend the excellence and success of initiatory books for children. Entertaining story, or natural dialogue, induces the pupil to read ; but, on the other hand, unless some useful instruction be mixed with this entertainment, nothing but mere amusement will be acceptable, and it will be difficult to bring the attention to fix itself, without dislike, upon any serious subject.

In fact, early instruction—I may trust my own experience, in the education of a large family—early instruction depends more upon oral communication, than upon books, either *task* books or books of amusement, that can be found for them, or, perhaps, that can be written. Books should be used to recal, arrange, and imprint what is learnt by the senses ; they will please the more, when they give back the images, that have been slightly impressed upon the memory.

I know, that it is much easier to point out what is desirable, than to show distinctly the means of accomplishing our wishes. How to fill up, from day to day, the aching void, in the little breasts of children, is a question, that cannot be easily solved. When I recommend teaching as much as possible, by oral instruction, I have this grand difficulty full in my view ; but I hope to point out, that means may be found, by which, in some degree, it may be obviated. There is scarcely any object which a child

sees or touches, that may not become a subject for *conversation* and *instruction*.

For instance, is the mother dressing?—the things on her dressing table are objects of curiosity to the child. The combs are of different sorts—horn, ivory, box, and tortoise shell. How can the horns of an ox be made flat, so as to be cut into the shape of a comb?—What is ivory? and where is tortoise shell to be had? A cane bottom chair frequently catches the attention of a child—it may be made a first lesson in weaving. At breakfast, how many objects for instruction!

The water in a basin reflects the sun—its image dances from place to place as the water moves. A spoon reflects the face, distorted to a frightful length; if turned in another direction, the face becomes ridiculously short.

The steam rises from the urn—the top is forced off the tea-urn—or the water bursts from the spout of a tea-kettle. The child observes that the water rises in a lump of sugar, that is dipped in the tea. The cream swims on the the top of the tea—milk mixes with it more readily than cream. At dinner, the back bone, and fins, and gills of a fish, every bone and joint of a fowl or a hare, or of any joint of meat, afford subjects of remark; and all these things, though but very little should be said of them at any one time, may, by degrees, be made subservient, not only to amusement, but to the acquisition of real knowledge.

It is by no means intended to recommend, that *lectures* should be spoken at every meal, or that the appetites of infants should be made to wait for an explanation of whatever they feed upon—it is only suggested, that the commonest circumstance of life, and the commonest objects that occur, may become the means of teaching useful facts, and what is of more consequence, habits of observation and reasoning. It will be objected, that, although the subjects which are here alluded to are familiar and of daily occurrence in families of all ranks, pa-

rents themselves are frequently not sufficiently capable of giving the instruction which is required.

To this it may be answered, that scarcely any parents are so situated, that they may not, without effort, acquire, from time to time, the little knowledge which they wish to communicate—at least so far as is requisite to excite and support the curiosity of their pupils.

All this may be easily effected by the higher classes of parents, who have leisure to attend to their children ; and those parents, who have not time themselves to pursue this course of tuition, may find proper assistants, at no great expense. There are, in England, many persons, who would be suited to such situations—widows, and elderly unmarried women, who are above the station of ordinary domestics, and yet are not sufficiently instructed or *accomplished* to become governesses. Such persons might be employed, to take the early care of children, while the lower offices of the nursery maid might be performed by common, uneducated servants. No person should daily or hourly converse with children, or should have power over them, or any share in the management of their minds, who does not possess good temper, and a certain degree of good sense. Accomplishments, learning, or even much *information*, in the usual sense of the word, will be unnecessary for the kind of *assistants* here described ; but the habit of speaking good language, and in a good accent, is indispensable.

All the knowledge requisite for explaining common objects, to children from six to eight years old, may be gradually acquired, as occasion calls for it daily ; and good sense, with a little practice, will soon *teach the teacher* how to manage instruction in conversation.

In families of less affluence, where this subordinate governess or attendant cannot be afforded, and when the mother cannot secure a friend to assist her, or has not an elder daughter to take a part in the care of the younger ones, the mother must give up more of her own time to

her children, than is usual or agreeable, or else she must send them to school.

Here recurs the difficulty of finding schools, where children can be rationally taught; that is to say, where distinct and useful knowledge may be clearly conveyed to their understandings, without unnecessary confinement, slavish habits, or corporal correction. To keep children poring over books that they cannot understand, or casting up sums without making them acquainted with the reasons for the rules which they mechanically follow, is all that can be expected from a common schoolmaster, or, to speak more properly, from a common school. Parents send young children to school, not only to learn what is professed to be taught, but also to keep their troublesome infants out of harm's way. Were the schoolmaster ever so much enlightened, or ever so well disposed, he must comply with the expectations of parents—he must keep his scholars apparently at work for a given number of hours—or he cannot satisfy his employers.

What is to be done?

The schoolmaster must appear to do as others do. The remedy does not lie with the school, or with the schoolmaster, but with the parents. Until parents are convinced of the inefficacy of the present system, things must remain as they are. When they are persuaded, that a reform is necessary, the next thing is to consider how it can be accomplished.

To encourage good elementary schools, more liberal emoluments must be allowed to schoolmasters and mistresses. To effect this purpose, without raising the present price of schooling, nothing more is necessary than to shorten the present enormous duration of school hours.

Two hours' attention is more than sufficient for the acquirement of any thing, which a young child ought to learn in a day; and even these two hours should be

interrupted by a relaxation of at least one-third of that time. Thus four different sets, or classes, of scholars might be sent daily to the same school, and for each class the present prices should be paid ; so that the master might have his salary considerably increased, without giving up more of his time than he does at present.

The numerous schools for early education, that are establishing, or that are already established in the metropolis, and in all the large towns of England, will, if they be properly managed, leave little to be desired upon the subject of education, for children between the years of seven and twelve.

The active modes of instruction, which Bell and Lancaster have introduced, are fully as advantageous, as the low price of schooling ; the children are prevented from *drowsing* over their lessons, and their little bodies are kept in some degree of motion. Certain petty *mountebankisms* will, by degrees, be laid aside ; and the good sense of the excellent persons, who give not only their money, but their time, to the superintendence of such establishments, will soon improve whatever requires commendation.

A good system for *infant management*, as it relates to the temper, the habits of truth, industry, cleanliness, neatness, and to the forming children to habits of observation, reasoning, and good sense—objects of far greater consequence, than the mere teaching to read and write, or cast up accounts—remains still to be formed and executed. Such schools are wanting, both for the middling classes and for the lower classes of the people and I apprehend that they cannot well be formed any way so well as by actual experiment.

Ladies, who have leisure, may, in the country, make trials of whatever occurs to them on this subject. The occupations and plays, liberty and restraint rewards and punishments of children, in those little communities we



call schools, may thus be examined and their respective excellence and defects may be compared ; and in time, some general results will be established.

For such an inquiry, next to a steady desire to be of service, patient attention, from day to day, is what must be most effectual.

These schools are what are commonly called *dame schools*.

A dame school, such as may prepare children for seminaries of a higher class, should, as much as possible, resemble a large private family, where the mistress may be considered as the mother. The children never should be out of the sight of their mistress, and their plays, as well as their tasks, should be equally an object of her care. And here, as in every other place of instruction, the hours, or rather the minutes, of labor, should be short, with frequent intermission ; so that the habit of attention may, by degrees, be induced, and may, by reiteration, be fortified.

Much of that useful enthusiasm, which animates all classes of people to encourage schools for young children, is owing to the female sex. They have more immediate opportunities of seeing the necessity, and of appreciating the merit of such schools ; their leisure permits them to inspect, more minutely, establishments of this sort ; and their acquaintance with the early propensities and habits of children enable them to direct, successfully, their instruction ; and it may be reasonably hoped, that, under their care, dame schools, with mistresses judiciously chosen, may be established whenever they are wanting. Another generation will reap the advantages of what has been begun in this ; and teachers of both sexes, and of various degrees of information, will hereafter be procured with ease ; and elementary schools will be established in every part of the united kingdom.

R. L. E.

THE  
LITTLE DOG TRUSTY:

OR

THE LIAR AND THE BOY OF TRUTH.

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VERY, very little children must not read this story; for they cannot understand it; they will not know what is meant by a liar and a boy of truth.

Very little children, when they are asked a question, say 'yes' and 'no,' without knowing the meaning of the words; but you, children, who can speak quite plain, and who can tell by words what you wish for, and what you want, and what you have seen, and what you have done: you who understand what is meant by the words 'I have done it;' or 'I have not,' you may read this story: for you can understand it.

Frank and Robert were two little boys, about eight years old.

Whenever Frank did any thing wrong, he always told his father and mother of it; and when any body asked him about any thing which he had done or said, he always told the

truth ; so that everybody who knew him, believed him ; but nobody who knew his brother Robert, believed a word which he said, because he used to tell lies.

Whenever he did any thing wrong, he never ran to his father and mother to tell them of it ; but when they asked him about it, he denied it, and said he had not done the things which he had done.

The reason that Robert told lies was, because he was afraid of being punished for his faults, if he confessed them. He was a coward, and could not bear the least pain ; but Frank was a brave boy, and could bear to be punished for little faults : his mother never punished him so much for such little faults, as she did Robert for the lies which he told, and which she found out afterwards.

One evening these two little boys were playing together in a room by themselves ; their mother was ironing in a room next to them, and their father was out at work in the fields, so there was nobody in the room with Robert and Frank, but there was a little dog named Trusty, lying by the fireside.

Trusty was a pretty playful little dog, and the children were very fond of him.

‘Come,’ said Robert to Frank, ‘there is Trusty lying beside the fire asleep ; let us go and waken him, and he will play with us.’

‘O yes, do let us,’ said Frank. So they both ran together towards the hearth, to waken the dog.

Now there was a basin of milk standing upon the hearth; and the little boys did not see whereabouts it stood, for it was behind them; as they were both playing with the dog, they kicked it with their feet and threw it down; and the basin broke, and all the milk ran out of it over the hearth, and about the floor; and when the little boys saw what they had done they were very sorry and frightened; but they did not know what to do; they stood for some time, looking at the broken basin and the milk, without speaking.

Robert spoke first.

‘So we shall have no milk for supper to-night,’ said he; and he sighed —

‘No milk for supper!—why not?’ said Frank; ‘is there no more milk in the house?’

‘Yes, but we shall have none of it; for do not you remember, last Monday, when we threw down the milk, mother said we were very careless, and that the next time we did so, we should have no more; and this is the next time; so we shall have no milk for supper to-night.’

‘Well then,’ said Frank, ‘we must do without it, that’s all: we will take more care another time, there’s no great harm done: come, let us run and tell mother. You know she bid us always tell her directly when we broke any thing; so come,’ said he, taking hold of his brother’s hand.

‘I won’t come, just now,’ said Robert, ‘don’t be in such a hurry, Frank—Can’t you

stay a minute ?' So Frank staid ; and then he said, ' come now, Robert.' But Robert answered, ' stay a little longer ; for I dare not go yet—I am afraid.'

Little boys, I advise you never be afraid to tell the truth : never say '*Stay a minute,*' and '*Stay a little longer ;*' but run directly and tell of what you have done that is wrong. The longer you stay, the more afraid you will grow, till at last perhaps you will not dare to tell the truth at all. Hear what happened to Robert.

The longer he staid the more unwilling he was to go to tell his mother that he had thrown the milk down ; and at last he pulled his hand away from his brother, and cried, ' I won't go at all, Frank, can't you go by yourself ?'

' Yes,' said Frank, ' so I will ; I am not afraid to go by myself : I only waited for you out of good nature, because I thought you would like to tell the truth too.'

' Yes, so I will ; I mean to tell the truth when I am asked ; but I need not go now when I do not choose it : and why need you go either ? Can't you wait here ? Surely my mother can see the milk when she comes in.'

Frank said no more, but, as his brother would not come, he went without him. He opened the door of the next room, where he thought his mother was ironing ; but when he went in he saw that she was gone ; and thought that she was gone to fetch some more



clothes to iron. The clothes he knew were hanging on the bushes in the garden ; so he thought his mother was gone there ; and he ran after her to tell her what had happened.

Now whilst Frank was gone, Robert was left in the room by himself ; and all the while he was alone he was thinking of some excuses to make to his mother ; and he was sorry that Frank was gone to tell her the truth. He said to himself, ‘ If Frank and I both were to say that we did not throw down the basin, she would believe us, and we should have milk for supper. I am very sorry Frank would go and tell her about it.’

Just as he said this to himself, he heard his mother coming down stairs—‘ O ho !’ said he to himself, ‘ then my mother has not been out in the garden, and so Frank has not met her, and cannot have told her ; so now I may say what I please.’

Then this naughty, cowardly boy determined to tell his mother a lie.

She came into the room ; but when she saw the broken basin and the milk spilled, she stopped short, and cried ‘ So, so !—What a piece of work is here ! Who did this, Robert ?’

‘ I don’t know, ma’am,’ said Robert, in a very low voice.

‘ You don’t know, Robert ! tell me the truth. I shall not be angry with you, child. You will only lose the milk at supper ; and as for the basin, I would rather have you

break all the basins I have, than tell me one lie. So don't tell me a lie. I ask you, Robert ; did you break the basin ?'

'No, ma'am, I did not,' said Robert ; and he coloured as red as fire.

'Then, where's Frank ? did he do it ?'

'No, mother, he did not,' said Robert : for he was in hopes that when Frank came in, he should persuade him to say that he did not do it.

'How do you know,' said his mother, 'that Frank did not do it ?'

'Because — because — because — ma'am,' said Robert, hesitating as liars do for an excuse, 'because I was in the room all the time and I did not see him do it.'

'Then how was the basin thrown down ? If you have been in the room all the time, you can tell.'

Then Robert going on from one lie to another answered, 'I suppose the dog must have done it.'

'Did you see him do it ?' says his mother.

'Yes,' said this wicked boy.

'Trusty, Trusty,' said his mother, turning round ; and Trusty, who was lying before the fire drying his legs, which were wet with the milk, jumped up and came to her. Then she said 'Fie ! fie ! Trusty !' pointing to the milk. 'Get me a switch out of the garden, Robert ; Trusty must be beat for this.'

Robert ran for the switch, and in the garden he met his brother : he stopped him and



told him in a great hurry, all that he had said to his mother : and he begged of him not to tell the truth, but to say the same as he had done.

‘No, I will not tell a lie,’ Frank said. ‘What ! and is Trusty to be beat ! He did not throw down the milk, and he shan’t be beat for it. Let me go to my mother.’

They both ran towards the house. Robert got first home, and he locked the house door that Frank might not come in. He gave the switch to his mother.

Poor Trusty ! he looked up as the switch was lifted over his head ! but he could not

speak to tell the truth. Just as the blow was falling upon him, Frank's voice was heard at the window.

'Stop, stop ! dear mother, stop !' cried he as loud as he could call ; 'Trusty did not do it—let me in—I and Robert did it—but do not beat Robert.'

'Let us in, let us in,' cried another voice which Robert knew to be his father's, 'I am just come from work, and here's the door locked.'

Robert turned as pale as ashes when he heard his father's voice ; for his father always whipped him when he told a lie.

His mother went to the door and unlocked it.

'What's all this ?' cried his father, as he came in ; so his mother told him all that had happened ; how the milk had been thrown down ; how she had asked Robert whether he had done it ; and he said that he had not, and that Frank had not done it, but that Trusty the dog had done it ; how she was just going to beat Trusty, when Frank came to the window and told the truth.

'Where is the switch with which you were going to beat Trusty ?' said their father.

Then Robert, who saw by his father's looks that he was going to beat him, fell upon his knees and cried for mercy, saying 'Forgive me this time, and I never will tell a lie again.'

But his father caught hold of him by the arm—'I will whip you now,' said he, 'and



then I hope you will not.' So Robert was whipped till he cried so loud with the pain, that the whole neighborhood could hear him, 'There,' said his father when he had done. 'now go to-bed ; you are to have no milk to-night, and you have been whipped. See how liars are served !' Then, turning to Frank, 'Come here and shake hands with me, Frank ; you will have no milk for supper ; but that does not signify ; you have told the truth, and have not been whipped, and everybody is pleased with you. And now I'll tell you what I'll do for you—I will give you the little dog Trusty to be your own dog. You shall feed him, and take care of him, and he shall



be your dog ; you have saved him a beating and I'll answer for it, you'll be a good master to him. 'Trusty, Trusty ! come here.'

'Trusty came ; then Frank's father took off Trusty's collar. 'To-morrow I'll go to the brazier's,' added he, 'and get a new collar made for your dog : from this day forward he shall always be called after you, *Frank* !'

THE  
ORANGE MAN:

OR

THE HONEST BOY AND THE THIEF.

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CHARLES was the name of the honest boy; and Ned was the name of the thief.

Charles never touched what was not his own : *this* is being an honest boy.

Ned often took what was not his own : this is being a thief.

Charles's father and mother, when he was a very little boy, had taught him to be honest, by always punishing him when he meddled with what was not his own : but when Ned took what was not his own, his father and mother did not punish him : so he grew up to be a thief.

Early one summer morning, as Charles was going along the road to school, he met a man leading a horse which was laden with panniers.

The man stopped at the door of a public house which was by the road side: and he said to the landlord, who came to the door, 'I

won't have my horse unloaded ; I shall only stop with you while I eat my breakfast. Give my horse to some one to hold here on the road, and let the horse have a little hay to eat.'

The landlord called ; but there was no one in the way ; so he beckoned to Charles, who was going by, and begged him to hold the horse.

'O,' said the man, 'but can you engage him to be an honest boy ? for these are oranges in my baskets ; and it is not every little boy one can leave with oranges.'

'Yes,' said the landlord, 'I have known Charles from the cradle upwards, and I never caught him in a lie or a theft : all the parish knows him to be an honest boy ; I'll engage your oranges will be as safe with him, as if you were by yourself.'

'Can you so ?' said the orange man ; 'then I'll engage, my lad, to give you the finest orange in my basket, when I come from breakfast, if you will watch the rest whilst I am away.'

'Yes,' said Charles, 'I *will* take care of your oranges.'

So the man put the bridle into his hand, and he went into the house to eat his breakfast.

Charles had watched the horse and the oranges about five minutes, when he saw one of his schoolfellows coming towards him. As he came nearer Charles saw that it was Ned.

Ned stopped as he passed, and said, 'Good-morrow to you, Charles ; what are you do-

ing there ? whose horse is that ? and what have you got in the baskets ?

‘ There are oranges in the baskets,’ said Charles ; ‘ and a man, who has just gone into the inn here, to eat his breakfast, bid me take care of them, and so I did ; because he said he would give me an orange, when he came back again.’

‘ An orange !’ cried Ned ; ‘ are you to have a whole orange ? I wish I was to have one ! However, let me look how large they are.’ Saying this, Ned went towards the pannier, and lifted up the cloth that covered it. ‘ La ! what fine oranges !’ he exclaimed the moment he saw them : ‘ Let me touch them, to feel if they are ripe.’

‘ No,’ said Charles, ‘ you had better not ; what signifies it to you whether they are ripe, you know, since you are not to eat them. You should not meddle with them ; they are not yours : You must not touch them.’

‘ Not touch them ! surely,’ said Ned, ‘ there’s no harm in *touching* them. You don’t think I mean to steal them I suppose.’ So Ned put his hand into the orange-man’s basket, and he took up an orange, and he felt it ; and when he had felt it, he smelled it. ‘ It smells very sweet,’ said he, ‘ and it feels very ripe ; I long to taste it ; I will only just suck one drop of juice at the top.’ Saying these words, he put the orange to his mouth.

Little boys, who wish to be honest, beware of temptation ; do not depend too much upon

yourselves ; and remember that it is easier to resolve to do right at first, than at last. People are led on by little and little to do wrong.

The *sight* of the oranges tempted Ned to *touch* them ; and the touch tempted him to *smell* them ; and the smell tempted him to *taste* them.

‘What are you about, Ned?’ cried Charles, taking hold of his arm. You said you only wanted to smell the orange ; do put it down, for shame !’

‘Don’t say *for shame* to me,’ cried Ned in a surly tone ; ‘the oranges are not yours, Charles !’

‘No, they are not mine ; but I promised to take care of them, and so I will :—so put down that orange !’

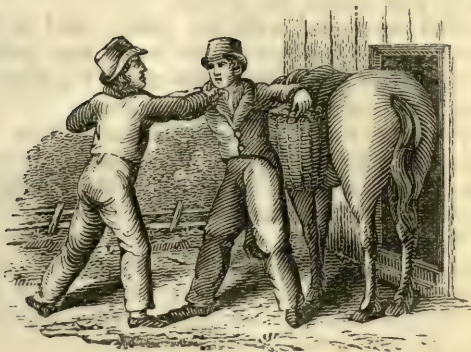
‘O, if it comes to that, I won’t,’ said Ned ; ‘and let us see who can make me, if I don’t choose it ? I’m stronger than you.’

‘I am not afraid of you for all that,’ replied Charles, ‘for I am in the right.’ Then he snatched the orange out of Ned’s hand, and he pushed him with all his force from the basket. Ned, immediately returning, hit him a violent blow which almost stunned him.

Still however this good boy, without minding the pain, persevered in defending what was left in his care ; he still held the bridle with one hand, and covered the basket with his other arm as well as he could.

Ned struggled in vain, to get his hands into the pannier again ; he could not ; and finding





he could not win by strength, he had recourse to cunning. So he pretended to be out of breath and to desist : but he meant as soon as Charles looked away, to creep softly round to the basket on the other side.

Cunning people, though they think themselves very wise, are almost always very silly.

Ned, intent upon one thing, the getting round to steal the oranges, forgot that if he went too close to the horse's heels, he should startle him.

The horse indeed, disturbed by the bustle near him, had already left off eating his hay and began to put down his ears ; but when he felt something touch his hind legs, he gave

a sudden kick, and Ned fell backwards just as he had seized the orange.

Ned screamed with the pain : and at the scream all the people came out of the public house to see what was the matter : and amongst them came the orange-man.

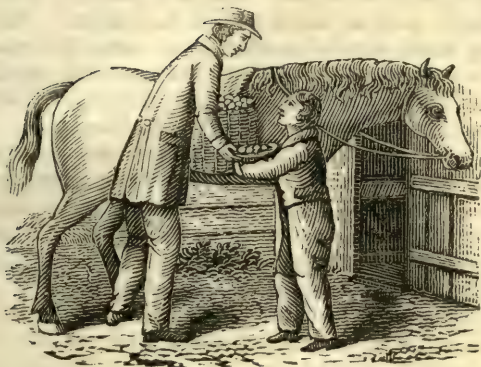
Ned was now so much ashamed, that he almost forgot the pain, and wished to run away ; but he was so much hurt, that he was obliged to sit down again.

The truth of the matter was soon told by Charles, and as soon believed by all the people present who knew him ; for he had the character of being an honest boy ; and Ned was known to be a thief and a liar.

So nobody pitied Ned for the pain he felt. ‘ He deserves it,’ says one. ‘ Why did he meddle with what was not his own ? ’ — ‘ Pugh ! he is not much hurt, I’ll answer for it,’ said another. ‘ And if he was, it’s a lucky kick for him, if it keeps him from the gallows,’ says a third. Charles was the only person who said nothing ; he helped Ned away to a bank ; for boys that are brave are always good-natured.

‘ O, come here,’ said the orange-man, calling him ; ‘ come here, my honest lad ! what ? you got that black eye in keeping my oranges, did you ?—that’s a stout little fellow,’ said he, taking him by the hand, and leading him into the midst of the people.

Men, women, and children, had gathered around, and all the children fixed their



eyes upon Charles and wished to be in his place.

In the mean time, the orange-man took Charles's hat off his head, and filled it with the fine china oranges. 'There, my little friend,' said he, 'take them, and God bless you with them! If I could but afford it, you should have all that is in my basket.'

Then the people, and especially the children, shouted for joy; but as soon as there was silence, Charles said to the orange-man, 'Thank'e, master, with all my heart; but I can't take your oranges, only that one I earned! take the rest back again; as for a black eye, that's nothing! but I won't be paid

for it, no more than for doing what's honest. So I can't take your oranges, master ; but I thank you as much as if I had them.' Saying these words he offered to pour the oranges back into the basket ; but the man would not let him. ' Then,' said Charles, ' if they are honestly mine, I may give them away ;' so he emptied the hat amongst the children his companions. ' Divide them amongst you,' said he ; and without waiting for their thanks, he pressed through the crowd and ran home. The children all followed him, clapping their hands, and thanking him.

The little thief came limping after. Nobody praised him, nobody thanked him ; he had no oranges to eat, nor had he any to give away. *People must be honest before they can be generous.* Ned sighed as he went towards home ; ' And all this,' said he to himself, ' was for one orange ; it was not worth while.'

No ; it is never worth while to do wrong.

Little boys, who read this story, consider which would you rather have been, *the honest boy, or the thief ?*

THE

## CHERRY ORCHARD.

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MARIANNE was a little girl of about eight years old ; she was remarkably good tempered ; she could bear to be disappointed, or to be contradicted, or to be blamed, without looking or feeling peevish, or sullen, or angry. Her parents, and her schoolmistress and companions, all loved her, because she was obliging.

Marianne had a cousin, a year younger than herself, named Owen, who was an ill tempered boy ; almost every day he was crying, or pouting, or in a passion, about some trifle or other ; he was neither obedient nor obliging. His play-fellows could not love him ; for he was continually quarrelling with them ; he would never, either when he was at play or at work, do what they wished ; but he always tried to force them to yield to his will and his humor.

One fine summer's evening, Marianne and Owen were setting out, with several of their companions to school. It was a walk of



about a mile from the town in which their fathers and mothers lived to the school house, if they went by the high-road ; but there was another way, through a lane, which was a quarter of a mile shorter.

Marianne, and most of the children, liked to go by the lane, because they could gather the pretty flowers which grew on the banks, and in the hedges ; but Owen preferred going by the high-road, because he liked to see the carts, and carriages and horsemen, which usually were seen upon this road.

Just when they were setting out, Owen called to Marianne, who was turning into the lane.

‘ Marianne,’ said he, ‘ you *must* not go by the lane to-day ; you must go by the road.’

‘ Why must not I go by the lane to-day ?’ said Marianne ; ‘ you know yesterday and the day before, that we all went by the high-road, only to please you ; and now let us go by the lane, because we want to gather some honey-suckles and dog-roses, to fill our dame’s flower-pots.’

‘ I don’t care for that ; I don’t want to fill our dame’s flower-pots ; I don’t want to gather honey-suckles and dog-roses ; I want to see the coaches and chaises on the road ; and you *must* go my way, Marianne ?’

‘ *Must* ! O, you should not say *must*,’ replied Marianne in a gentle tone.

‘ No indeed !’ cried one of her companions, ‘ you should not ; nor should you look so

cross ; that is not the way to make us do what you like.'

'And besides,' said another, 'what right has he always to make us do as he pleases? He never will do any thing that we wish.'

Owen grew quite angry when he heard this ; and he was going to make some sharp answer, when Marianne, who was good-natured, and always endeavored to prevent quarrels, said, 'Let us do what he asks, this once ; and I dare say he will do what we please the next time—we will go by the high-road to school, and we can come back by the lane in the cool of the evening.'

To please Marianne, whom they all loved, they agreed to this proposal. They went by the high-road ; but Owen was not satisfied, because he saw that his companions did not comply for his sake ; and as he walked on, he began to kick up the dust with his feet, saying, 'I'm sure it is much pleasanter here than in the lane ; I wish we were to come back this way—I'm sure it is much pleasanter here than in the lane ; is it not, Marianne ?'

Marianne could not say that she thought so.

Owen kicked up the dust more and more.

'Do not make such a dust, dear Owen,' said she ; 'look how you have covered my shoes and clean stockings with dust.'

'Then say that it is pleasanter here than in the lane. I shall go on making this dust till you say that.'

‘ I cannot say that, because I do not think so, Owen.’

‘ I will make you think so, and say so too.’

‘ You are not taking the right way to make me think so ; you know that I cannot think this dust agreeable.’

Owen persisted ; and he raised continually a fresh cloud of dust, in spite of all that Marianne or his companions could say to him. They left him, and went to the opposite side of the road ; but wherever they went he pursued—At length they came to a turnpike gate, on one side of which there was a turn-stile ; Marianne and the rest of the children passed, one by one, through the turn-stile, while Owen was emptying his shoes of the dust. When this was done, he looked up and saw all his companions on the other side of the gate holding the turnstile, to prevent him from coming through.’

‘ Let me through, let me through,’ cried he, ‘ I must and will come through.’

‘ No, no, Owen,’ said they, ‘ *must* will not do now ; we have you safe ; here are ten of us ; and we will not let you come through till you will promise not to make any more dust.’

Owen, without making any answer, began to kick, and push, and struggle, with all his might ; but in vain he struggled, pulled, pushed and kicked ; he found that ten people are stronger than one. When he felt that he could not conquer them by force, he began to

cry ; and he roared as loud as he possibly could.

No one but the turnpike-man was within hearing ; and he stood laughing at Owen.

Owen tried to climb the gate, but he could not get over it, because there were iron spikes at the top.

‘ Only promise that you will not kick up the dust, and they will let you through,’ said Marianne.

Owen made no answer, but continued to struggle till his whole face was scarlet, and till both his wrists ached : he could not move the turn-stile an inch.

‘ Well,’ said he stopping short, ‘ now you are all of you joined together, you are stronger than I : but I am as cunning as you.’

He left the stile, and began to walk homewards.

‘ Where are you going ? You will be too late at school, if you turn back and go by the lane,’ said Marianne.

‘ I know that, very well ; but that will be your fault and not mine—I shall tell our dame, that you all of you held the turn-stile against me, and would not let me through.’

‘ And we shall tell our dame why we held the turn-stile against you,’ replied one of the children ; ‘ and then it will be plain that it was your fault.’

Perhaps Owen did not hear this ; for he was now at some distance from the gate. Pres-

ently he heard some one running after him—it was Marianne.

‘O, I am so much out of breath with running after you,—I can hardly speak!—But I am come back,’ said this good-natured girl, ‘to tell you that you will be sorry if you do not come with us; for there is something that you like very much, just at the turn of the road, a little beyond the turnpike gate.’

‘Something that I like very much!—What can that be?’

‘Come with *me* and you shall *see*,’ said Marianne; ‘that is both rhyme and reason. Come with *me*, and you shall *see*.’

She looked so good humored, as she smiled and nodded at him, that he could not be sullen any longer.

‘I don’t know how it is, cousin Marianne,’ said he; ‘but when I am cross you are never cross; and you can always bring me back to good humor again, you are so good-humored yourself—I wish I was like you—But we need not talk any more of that now—What is it that I shall see on the other side of the turnpike-gate?—What is it that I like very much?’

‘Don’t you like ripe cherries very much?’

‘Yes; but they don’t grow in these hedges.’

‘No; but there is an old woman sitting by the road side, with a board before her, which is covered with red ripe cherries.’

‘Red ripe cherries! Let us make haste,’ cried Owen. He ran on as fast as he could; but, as soon as the children saw him running,



they also began to run back to the turnstile; and they reached it before he did; and they held it fast as before, saying, 'Promise you will not kick up the dust, or we will not let you through.'

'The cherries are very ripe,' said Marianne.

'Well, well, I will not kick up the dust—Let me through,' said Owen.

They did so, and he kept his word; for, though he was ill-humored, he was a boy of truth: and he always kept his promises—He found the cherries looked red and ripe as Marianne had described them.

The old woman took up a long stick that lay on the board before her. Bunches of cherries were tied with white thread to this stick: and, as she shook it in the air over the heads of the children, they all looked up with longing eyes.

'A halfpenny a bunch!—Who will buy? Who will buy? Who will buy?—Nice ripe cherries!' cried the old woman.

The children held out their halfpence; and 'Give me a bunch,' and 'Give me a bunch!' was heard on all sides.

'Here are eleven of you,' said the old woman, 'and there are just eleven bunches on this stick.'

She put the stick into Marianne's hand as she spoke.

Marianne began to untie the bunches; and her companions pressed closer and closer to



her, each eager to have the particular bunch which they thought the largest and the ripest.

Several fixed upon the uppermost, which looked indeed extremely ripe.

‘You cannot all have this bunch,’ said Marianne; ‘to which of you must I give it? You all wish for it?’

‘Give it to me, give it to *me*,’ was the first cry of each; but the second was, ‘Keep it yourself, Marianne; keep it yourself.’

‘Now, Owen, see what it is to be good-natured, and good-humored, like Marianne,’ said Cymon, the eldest of the boys, who stood near him. ‘We are all ready to give up the ri-

pest cherries to Marianne ; but we should never think of doing so for you, because you are so cross and disagreeable."

' I am not cross *now* ; I am not disagreeable *now*,' replied Owen ; ' and I do not intend to be cross and disagreeable any more.'

This was a good resolution : but Owen did not keep it many minutes. In the bunch of cherries which Marianne gave to him for his share, there was one which, though red on one side, was entirely white and hard on the other.

' This cherry is not ripe ; and here's another that has been half eaten away by the birds. O, Marianne, you gave me this bad bunch on purpose—I will not have this bunch.'

' Somebody must have it,' said Cymon ; ' and I do not see that it is worse than the others ; we all shall have some cherries that are not so good as the rest ; but we shall not grumble and look so cross about it as you do.'

' Give me your bad cherries, and I will give you two out of my fine bunch, instead of them,' said the good-natured Marianne.

' No, no, no !' cried the children ; ' Marianne, keep your own cherries.'

' Are you not ashamed, Owen ?' said Cymon—' How can you be so greedy ?'

' Greedy !—I am not greedy,' cried Owen, angrily ; ' but I will not have the worst cherries ; I will have another bunch.'

He tried to snatch another bunch from the stick. Cymon held it above his head. Owen leaped up, reached it, and when his compan-

ions closed round him, exclaiming against his violence, he grew still more angry ; he threw the stick down upon the ground, and trampled upon every bunch of the cherries in his fury, scarcely knowing what he did, or what he said.

When his companions saw the ground stained with the red juice of their cherries, which he trampled under his feet, they were both sorry and angry.

The children had not any more halfpence ; they could not buy any more cherries ; and the old woman said she could not give them any.

As they went away sorrowfully, they said, ‘ Owen is so ill-tempered, that we will not play with him, nor speak to him, nor have any thing to do with him.’

Owen thought that he could make himself happy without his companions ; and he told them so. But he soon found himself mistaken.

When they arrived at the schoolhouse, their dame was sitting in the thatched porch before her own door, reading a paper that was printed in large letters—‘ My dears,’ said she to her little scholars, ‘ here is something that you will be glad to see ; but say your lessons first—One thing at a time—Duty first and pleasure afterwards. Whichever of you says your lessons best, shall know first what is in this paper, and shall have the pleasure of telling the good news.’

Owen always learned his lessons very well, and quickly ; he now said his lesson better than any of his companions said theirs ; and

he looked round him with joy and triumph ; but no eye met his with pleasure ; nobody smiled upon him, no one was glad that he had succeeded : on the contrary, he heard those near him whisper, ‘ I should have been very glad if it had been Marianne who had said her lesson best, because she is so good-natured.’

The printed paper, which Owen read aloud, was as follows :

‘ On Thursday evening next, the gate of the cherry orchard will be opened ; and all who have tickets will be let in, from six o’clock till eight. Price of tickets, six-pence.’

The children wished extremely to go to this cherry orchard, where they knew they might gather as many cherries as they liked, and where they thought that they should be very happy in sitting down under the trees and eating fruit—But none of these children had any money ; for they had spent their last half-pence in paying for those cherries which they never tasted—those cherries which Owen, in the fury of his passion, trampled in the dust.

The children asked their dame what they could do to earn six-pence a piece ; and she told them that they might perhaps be able to earn this money by plaiting straw for hats, which they had all been taught to do by their good dame.

Immediately the children desired to set to work.

Owen, who was very eager to go to the cherry orchard, was the most anxious to get



forward with the business : he found, however, that nobody liked to work along with him ; his companions said, ‘ We are afraid that you will quarrel with us ; we are afraid that you will fly into a passion about the straws, as you did about the cherries ; therefore we will not work with you.’

‘ Will not you ? then I will work by myself,’ said Owen ; ‘ and I dare say that I shall have done my work long before you have any of you finished yours ; for I can plait quicker and better than any of you.’

It was true that Owen could plait quicker and better than any of his companions ; but he was soon surprised to find that his work did not go on so fast as theirs.

After they had been employed all the remainder of this evening, and all the next day, Owen went to his companions, and compared his work with theirs.

‘ How is this ?’ said he ; ‘ how comes it that you have all done so much, and I have not done nearly so much, though I work quicker than any one of you, and I have worked as hard as I possibly could ? What is the reason that you have done so much more than I have ?’

‘ Because we have all been helping one another, and you have had no one to help you ; you have been obliged to do every thing for yourself.’

‘ But still I do not understand how your helping one another can make such a differ-

ence,' said Owen ; ' I plait faster than any of you.'

His companions were so busy at their work, that they did not listen to what he was saying. He stood behind Marianne in a melancholy posture, looking at them, and trying to find out why they went on so much faster than he could. He observed that one picked the outside off the straws ; another cut them to the proper length, another sorted and laid them in bundles ; another flattened them ; another (the youngest of the little girls, who was not able to do anything else,) held the straws ready for those who were plaiting ; another cut off the rough ends of the straws when the plaits were finished ; another ironed the plaits with a hot smoothing iron ; others sewed the plaits together. Each did what he could do best and quickest ; and none of them lost any time in going from one work to another, or in looking for what they wanted.

On the contrary, Owen had lost a great deal of time in looking for all the things that he wanted ; he had nobody to hold the straws ready for him as he plaited ; therefore he was forced to go for them himself, every time he wanted them ; and his straws were not sorted in nice bundles for him ; the wind blew them about ; and he wasted half an hour at least in running after them. Besides this, he had no friend to cut off the rough ends for him ; nor had he any one to sew the plaits

together ; and, though he could plait quickly, he could not sew quickly ; for he was not used to this kind of work. He wished extremely for Marianne to do it for him. He was once a full quarter of an hour in threading his needle, of which the eye was too small. Then he spent another quarter of an hour in looking for one with a larger eye ; and he could not find it at last, and nobody would lend him another. When he had done sewing, he found that *his hand was out for plaiting* ; that is, he could not plait so quickly after his fingers had just been used to another kind of work ; and, when he had been smoothing the straws with a heavy iron his hand trembled afterwards for some minutes, during which time he was forced to be idle : thus it was that he lost time by doing every thing for himself ; and though he lost but a few minutes or seconds in each particular, yet when all these minutes and seconds were added together, they made a great difference.

‘ How fast, how very fast, they go on ! and how merrily ! ’ said Owen, as he looked at his former companions. ‘ I am sure I shall never earn sixpence for myself before Thursday ; and I shall not be able to go to the cherry-orchard. I am very sorry that I trampled on your cherries ; I am very sorry I was so ill-humored ; I will never be cross any more.’

‘ He is very sorry that he was so ill-humored ; he is very sorry that he trampled on our cherries,’ cried Marianne ; ‘ do you hear

what he says? he will never be cross any more.'

'Yes, we hear what he says,' answered Cymon; 'but how are we to be sure that he will do as he says?'

'O,' cried another of his companions, 'he has found out at last that he must do as he would be done by.'

'Aye,' said another; 'and he finds that we who are good-humored and good-natured to one another, do better even than he, who is so quick and so clever.'

'But if, besides being so quick and so clever, he was good-humored and good-natured,' said Marianne, 'he would be of great use to us; he plaits a vast deal faster than Mary does, and Mary plaits faster than any of us. Come let us try him, let him come in amongst us.'

'No, no, no,' cried many voices; 'he will quarrel with us; and we have no time for quarrelling. We are all so quiet and so happy without him! Let him work by himself, as he said he would.'

Owen went on, working by himself; he made all the haste that he possibly could: but Thursday came, and his work was not nearly finished. His companions passed by him with their finished work in their hands. Each as they passed, said, 'What! have you not done yet, Owen?' and then they walked on to the table where their dame was sitting, ready to pay them their sixpences.

She measured their work, and examined it;



and when she saw that it was well done, she gave to each of her little workmen and workwomen the sixpence they had earned, and she said, ‘I hope, my dears, that you will be happy this evening.’

They all looked joyful ; and, as they held their sixpences in their hands, they said, ‘If we had not helped one another, we should not have earned this money ; and we should not be able to go to the cherry orchard.’

‘Poor Owen!’ whispered Marianne to her companions, ‘look how melancholy he is sitting there alone at his work!—See, his hands tremble, so that he can hardly hold the straws ; he will not nearly finish his work in time : he cannot go with us.’



‘He should not have trampled on our cherries ; and then perhaps we might have helped him,’ said Cymon.

‘Let us help him though he did trample on our cherries,’ said the good-natured Marianne — ‘He is sorry for what he did, and he will never be so ill-humored or ill-natured again. Come, let us go and help him. If we all help, we shall have his work finished in time, and then we shall all be happy together.’

As Marianne spoke, she drew Cymon near to the corner where Owen was sitting ; and all her companions followed.

‘Before we offer to help him, let us try whether he is now inclined to be good-humored and good-natured.’

‘Yes, yes, let us try that first,’ said his companions.

‘Owen, you will not be done time enough to go with us,’ said Cymon.

‘No, indeed,’ said Owen, ‘I shall not ; therefore I may as well give up all thoughts of it. It is my own fault, I know.’

‘Well, but as you cannot go yourself, you will not want your pretty little basket ; will you lend it to us to hold our cherries ?’

‘Yes, I will with pleasure,’ cried Owen, jumping up to fetch it.

‘Now he is good-natured, I am sure,’ said Marianne.

‘This plaiting of yours is not nearly so well done as ours,’ said Cymon ; ‘look, how uneven it is.’

‘ Yes, it is rather uneven, indeed,’ replied Owen.

Cymon began to untwist some of Owen’s work ; and Owen bore this trial of his patience with good temper.’

‘ O, you are pulling it all to pieces, Cymon !’ said Marianne ; ‘ this is not fair.’

‘ Yes, it is fair,’ said Cymon ; ‘ for I have undone only an inch ; and I will do as many inches for Owen as he pleases, now that I see he is good-humored.’

Marianne immediately sat down to work for Owen ; and Cymon and all his companions followed her example. It was now two hours before the time when the cherry-orchard was to be opened ; and, during these two hours, they went on so expeditiously, that they completed the work.

Owen went with them to the cherry-orchard, where they spent the evening all together very happily. As he was sitting under a tree with his companions, eating the ripe cherries, he said to them,—‘ Thank you all, for helping me : I should not have been here now eating these ripe cherries, if you had not been so good-natured to me. I hope I shall never be cross to any of you again : whenever I feel inclined to be cross, I will think of your good-nature to me, and of THE CHERRY-ORCHARD.’

# HARRY AND LUCY.



## PART I.

LITTLE children, who know the sounds of all letters, can read words, and can understand what is told in this book.

Harry was brother to Lucy, and Lucy was sister to Harry. Harry had just come home to his father's house : he had been left at his uncle's, when he was an infant, and had always lived at his uncle's house.

Lucy lay in a little bed in a closet near her mother's room ; and Harry lay in a little bed in another closet.



Early in the morning, whilst Lucy was in bed, the sun shone through the window and awakened her ; when she was quite awake, she knew it was morning, because it was daylight ; and she called to her mother, and said, ' Mamma, may I get up ? ' But her mother did not answer her, for she did not hear what she said, because she was asleep. When Lucy knew that her mother was asleep, she lay still, that she might not disturb her,

until she heard her mother stir ; and then she asked her again if she might get up ; and her mother said she might.

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So Lucy got up, and put on her stockings and shoes, and finished dressing herself, and then went to her mother, and asked for some breakfast. But her mother told her, that she must make her bed, before she could have any breakfast. Little Lucy began to make her bed, and her mother went into another closet to awaken Harry ; and she said, Harry ! get up ! And Harry jumped out of bed in an instant, and put on his trousers, and his jacket, and his shoes ; and then he combed his hair, and washed his hands ; and whilst he was wiping his hands his mother went down stairs.

Little Lucy, hearing her brother Harry walking about in his closet, called him, and asked, if he had made his bed. Harry said he had not. O ! then, says Lucy, mamma will give you no breakfast. Yes, says Harry, she will : I never made my bed at my uncle's, and I always had my breakfast.

As they were talking, he heard his father call him, and he ran down stairs to the parlor, where his father and mother were at breakfast ; and her mother called Lucy down too, and said to her, Well, Lucy ! have you made your bed neatly ?

*Lucy.* Yes, mother, I have made it as well as I could.

*Mother.* You shall have some breakfast then.

His father asked Harry if he had made his bed. Harry answered that he did not know how to make it. I will show you, said his mother ; and taking him by the hand, she led him up stairs, and showed him how to make his bed.

When Harry came down to his father, he said that he did not know, that boys or men ever made beds ; for at his uncle's, nobody ever made beds but the housemaid.

His father told him, that, in some countries, the beds are made by men ; and that in ships, which sail on the sea, and carry men from one country to another, the beds in which the sailors sleep are always made by men.

Lucy's mother observed that she had breakfast, and asked her why she had not eaten it.

Lucy said that she waited for her brother. Her mother then gave Harry a basin of milk, and a large piece of bread ; and she set a little table for him and his sister, under a shady tree, that was opposite to the open window of the room where she breakfasted.

Lucy was a good little girl, and had always minded what was said to her, and had been very attentive whenever her father or mother had taught her anything. So her mother had taught her to read and to work, and when she was six years old she could employ herself without being troublesome to any body : she could work for herself, and for her brother, and sometimes, when Lucy behaved very



well, ner mother let her do a little work for her, or for her father ; and her mother had given her a little thimble, to put upon her finger, and a little housewife, to keep her needles and thread in, and a little pair of scissors to cut her thread with, and a little work-bag to keep her work in ; and Lucy's father had given her a little book, to read in, whenever she pleased, and she could read in it by herself, and understand all she read, and learn every thing that was in it.

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As soon as Lucy had eaten the breakfast which her mother had given her, she sat down on her stool, and took her work out of her work-bag and worked some time ; then her mother told her, that she had worked an hour, and that she did not choose that she should work any longer ; so Lucy got up and brought her work to her mother, and asked her, if it was done as it ought to be done.

And her mother said, Lucy, it is done pretty well for a little girl that is but six years old, and I am pleased to see that you have tried to avoid the fault, which I told you of yesterday : then Lucy's mother kissed her, and said to her, put your work into your work-bag, and put your work-bag into its place, and then come back to me.

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Lucy did as she was desired to do ; and then her mother asked her, if she would rath-

er go out of doors and walk, or stay with her. Lucy liked best to stay with her mother, who very soon afterwards went to her dairy.

Lucy followed her, and took a great deal of care not to be troublesome, for she loved to be with her mother; but she observed whatever she saw, and did not meddle with any thing. She saw that the dairy was very clean; the floor was a little damp, which made her think, that it had been washed that morning, and there were not any cobwebs nor dust upon the walls; and she perceived that the room smelt very sweet: she looked about, to find out if there were any flowers that could make that pleasant smell, but she could not see any thing, but a great many clean empty vessels of different shapes, and a great many round, wide, and shallow pans full of milk: she went near to them, and thought the smell came from them.

When she had looked at a good many of them, she thought they were not all alike; the milk in some of the pans was a little yellowish, and looked thick, like the cream that she saw every morning at her mother's breakfast; and the milk, in the other pans, was a little blue, and looked thin, like the milk that was often given to her and her brother to drink. Whilst Lucy was thinking on this, she saw one of her mother's maids go to one of the pans, that had the yellowish milk in it, and the maid had a wooden saucer in her

hand, and she put the wooden saucer very gently into the pan ; she did not put it down to the bottom of the pan, but took up that part of the milk, which was at the top, and put it into another vessel, and then Lucy saw that the milk, that was left in the pan, was not at all like what the maid had taken out, but was very thin, and a little blue.

When Lucy's mother went out of the dairy, she took her little daughter out into the fields to walk with her. Soon after they set out, Lucy said, Mother, when I was in your dairy just now, I saw the maid take some milk out of a milk pan, and it looked like what I see you put into your tea, and I believe it is called cream ; but she left some milk in the pan, that was not at all like cream, but like very thin milk : pray, mother, will you tell me, why all that was in the pan was not cream ? Then her mother said, Yes, Lucy, I will answer any questions, you like to ask me, when I have leisure, because, whenever I talk to you, you mind what I say, and remember whatever your father or I teach you.

I believe you know, that the kind of milk, which I give you very often for your breakfast and supper, is taken out of the udders of cows : did you never see the maids, with milk-pails going a milking ? They were then going to take the milk from my cows ; they call that milking them, and it is done twice every day, once in the morning and once in the evening. When they have gotten milk in the

pails, they carry it into the dairy, and put it into such milk-pans as you saw, and they let the milk-pans stand still, in the same place, for several hours, that the milk may not be shaken ; and in that time the heaviest part of the milk falls as low as it can, towards the bottom of the pan, and the lightest part of the milk remains above it at the top of the pan, and that thick light part is called cream, as you thought it was. When the milk has stood long enough, the cream is taken from the other part of the milk, and doing this, is called skimming the milk, but it must be done very carefully, or else the cream and milk will all be mixed together again. Lucy told her mother, that, when she was in the dairy, she had walked all round it, and that she saw a great deal of cream ; more, she thought, than came every day into the parlor : and she wished to know, what other use it was for, except to mix with tea, and fruit, or sweetmeats.

Lucy's mother was going to answer her, but she looked towards the other side of the field, and said, Lucy, I think I see some pretty flowers there, will you run and gather me a nosegay, before I talk any more to you ? Lucy said, Yes, mother ; and ran away to get what her mother had desired ; when she came to the place, where the flowers were, she looked about for the prettiest, and gathered two or three of them, but, when she had them in her hand, she perceived, they had not any smell ; so she went to a great many more,

and at last she found some, that had a sweet smell ; but they were not pretty, and she gathered some of them, and was taking them to her mother ; but as she passed near the hedge, she saw some honey-suckles growing in it, and she remembered that she had smelt honey-suckles that were very sweet, and they were pretty too, so she was glad that she had found some, for she thought her mother would like them ; but when she came close to the hedge, she saw that they were so high from the ground that she could not reach them. Lucy did not like to go away, without taking some honey-suckles to her mother, so she walked slowly by the side of the hedge, till she came to a place, where there was a large stone, upon which she climbed, and gathered as many honey-suckles as she liked.

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Whilst she was getting down, she held the flowers fast, for fear she should drop them into the ditch, and she felt something prick her finger very sharply ; she looked, and she saw a bee drop down off one of the honey-suckles, that she had squeezed in her hand ; so she thought, that she had hurt the bee, and that the bee had stung her, to make her let him go, and that it was the bee, that she had felt pricking her. Lucy was afraid that she had hurt the bee very much, for she remembered, that, when she opened her hands, the bee did not fly away, but dropt down ; so she looked for



it on the ground, and she soon found it struggling in some water, and trying with its little legs and wings to get out, but it was not strong enough. Lucy was very sorry for the bee ; but she was afraid to touch it, lest she should hurt it again, or that it should hurt her. She thought for a little while what she could do, and then she got a large stalk of a flower, and put it close to the bee : as soon as ever the bee felt it, he clasped his legs round it, and Lucy raised the stalk with the bee upon it, gently from the wet ground, and laid it upon a large flower that was near her. The bee was sadly covered with dirt, but, as soon as he felt that he was standing upon his legs again, he began to stretch his wings and to clean himself, and to buz a little upon the flower. Lucy was glad to see that the bee did not seem to be very much hurt, and she took up her nosegay and ran as fast as she could towards her mother ; but the finger, that the bee had stung, began to be very sore.

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She met her mother coming to her, who wondered what had made her stay so long ; and when Lucy had told her what had happened, she said, I thank you, my dear, for getting me so sweet a nosegay, and I am very sorry you have been hurt in doing it ; I am sure you did not intend to hurt the poor little bee, and will walk home now, and I will put some hartshorn to your finger, which will les-

sen the pain you feel. Lucy said, Indeed, mother, I did not mean to hurt the bee, for I did not know that it was in my hand ; but, when I am going to gather flowers another time, I will look to see if there are any bees upon them.

When Lucy's mother got home, some harts-horn was put to Lucy's finger, and soon after it grew easier, and Lucy's mother said to her, Now I am going to be busy, and if you like it you may go into the garden, till dressing time : Lucy thanked her, and said, she did like it, but she hoped, that some time, when she was not busy, her mother would answer what she had asked about cream.

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After breakfast, Harry's father took him out a walking ; and they came to a field, where several men were at work ; some were digging clay out of a pit, in the ground ; some were wetting what was dug out, with water, and others were making the clay into a great number of pieces, of the same size and shape. Harry asked his father, what the men were about, and he told him, that they were making bricks for building houses. Yes, says Harry, but I can run my finger into these ; they are quite soft and brown, and the bricks of your house are red and hard ; and they don't stick together as the bricks of your house do ; saying this, he pushed down a whole stack of bricks. The



man who was making them called out, to desire he would pay for those he had spoiled : little Harry had no money, and did not know what to do ; but said to the man, indeed, sir, I did not intend to do any harm : the man answered, whether you intended it or not, you have spoiled the bricks, and must pay me for them ; I am a poor man, and buy all the bread that I have, with the money which I get for these bricks, and I shall have less bread, if I have a smaller number of bricks to sell.

Poor Harry was very sorry for what he had

he had done, and at last thought of asking his father to pay for them : but his father said, I have not spoiled them, and therefore it is not necessary that I should pay for them. The man, seeing that Harry had not intended to do mischief, told him if he would promise to make amends at some future time, for the mischief which he had done, he would be satisfied. Harry promised he would. Now you find, Harry, said his father, that you must not meddle with what does not belong to you.

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As they walked on farther, they came to a blacksmith's shop, and, as it began to rain, Harry's father stood under the shed, before the door ; and a farmer came riding to the shop, and asked the blacksmith to put a shoe upon his horse, which he said had lost one a little way off, and which would be lamed, if he went over any stony road without a shoe. Sir, says the blacksmith, I cannot shoe your horse, as I have not iron enough ; I have sent for some to the next town, and the person whom I sent, cannot be back before evening.

Perhaps, said the farmer, you have an old shoe, that may be made to fit my horse.

The smith had no iron, except a bit of small nail rod which was fit only for making nails ; but he said, that, if the farmer looked on the road, perhaps he might find the shoe, which had fallen from his horse. Little Harry, hear-

ing what had passed, told his father, that he thought he could find a shoe for the farmer's horse. His father asked him, where he thought he could find a shoe ?

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He said that he had observed something as they walked along the road, lying in the dirt, which he thought was like a horse-shoe. His father begged that the farmer would wait a little while ; and then he walked back with Harry on the road by which they came to the blacksmith's ; and Harry looked very carefully, and after some time he found the horse-shoe, and brought it back to the blacksmith's shop ; but it was not fit to be put again upon the horse's foot, as it had been bent by a wagon wheel, which had gone over it.

The farmer thanked Harry, and the blacksmith said that he wished every little boy was as attentive and as useful. He now began to blow his large bellows, which made a roaring noise, and the wind came out of the pipe of the bellows among the coals upon the hearth, and the coals became red, and by degrees they became brighter and brighter, as the fire became hotter ; and the smith put the old iron horse-shoe into the fire, and after some time it became red and hot like the coals ; and when the smith thought the iron was hot enough, he took it out of the fire with a pair of tongs, and put it upon the anvil, and struck it with a heavy hammer. Harry saw



that the iron became soft by being made red hot ; and he saw that the smith could hammer it into whatever shape he pleased.

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When the smith had made the shoe of a proper size and shape, he took a piece of nail-rod, and heated it red-hot in the fire, by the help of the large bellows, which he blew with his right hand, whilst he held the tongs in his left.

Harry was going to examine the horse-shoe that the smith had just made, but he would not meddle with it without leave, as he recollected what had happened in the brick-field.

Whilst he was looking at the shoe, another little boy came into the shop, and, after lounging about for some time, he stooped down and took up the horse-shoe in his hand ; but he suddenly let it drop, and roared out violently, and said that he was burned. Whilst he was crying, and blowing his fingers, and squeezing and pinching them, to lessen the pain, the smith turned him out of the shop, and told him, that, if he had not meddled with what did not belong to him, he would not have been hurt. The little boy went away whimpering, and muttering, that he did not know that black iron would burn him.

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The smith now took the nail rod out of the fire, and it was hotter than the other iron

and it was of a glowing white color ; and when the smith struck it upon the anvil, a number of bright sparks were struck off the iron, on every side, about the shop : they appeared very beautiful.

The smith then made some nails, and began to fasten the shoe on the horse's foot with nails. Harry, who had never before seen a horse shod, was much surprised that the horse did not seem to be hurt by the nails which were driven into his foot ; for the horse did not draw away his foot ; nor show any signs of feeling pain. Harry's father asked him if he had ever had his nails cut ?

Harry said he had.

*Father.* Did cutting your nails hurt you ?

*Harry.* No.

*Father.* A horse's hoof is of horn, like your nails, and that part of it, that has no flesh fastened to it, does not feel pain : the outside of the hoof may be cut, and may have nails driven into it, without giving any pain to the horse.

The blacksmith, who was paring the horse's foot, gave a piece of the horn, that he had cut off, to Harry, who perceived that it was neither so hard as bone, nor so soft as flesh ; and the blacksmith told him that the hoof of a horse grows in the same manner as the nails of a man, and requires, like them, to be sometimes pared.

And when the blacksmith had finished shoeing the horse, he showed Harry the hoof

of a dead horse, that was separate from the foot, and Harry saw how thick it was in that part, where the nails were to be driven.

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Harry's father now told him, that it was time to go home, as they had two miles to walk, and it wanted but an hour to dinner-time. Harry asked his father, how much time it would take up to walk two miles, if they walked as fast as they commonly did, and his father showed him his watch, and told him he might see, when they got home, how long they had been returning. Harry saw that it was four minutes after two o'clock, and, when they got home, it was forty-eight minutes after two ; so Harry counted, and found out how many minutes had passed from the time they left the blacksmith's until they got home.

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When Harry came into the garden, he ran to his sister Lucy, to tell her all that had happened to him, and she left what she was about, and ran to meet him. She thought he had been away a great while, and was very glad to see him : but just then the bell rang, and they knew they must go in directly to make themselves clean before dinner.

When dinner was over, Harry and Lucy were let go into the garden, and Lucy then begged her brother, to tell her all that had

happened, whilst he was out in the morning. Harry then told her, how he had spoiled the bricks, and what the brickmaker had said to him ; and he told her, that he had promised to make amends for the mischief which he had done.

He told her, that to make bricks men dug clay, and beat it with a spade, and mixed it with water, to make it soft and sticky, and that then they made it into the shape of bricks, and left it to dry ; and, when it was hard enough to be carried without breaking, it was put into large heaps and burned, so as to become of a reddish yellow color, and almost as hard as a stone.

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Then, brother, says Lucy, if you will make some bricks, we can build a house in the little garden mother has lent me. So they went to the little garden, and Harry dug some earth with a little spade, which his father had given him, and endeavored to make it stick together with some water, but he could not make it stick, like the clay, that he saw the brickmakers use ; and he ran in, and asked his father why he could not make it stick with water. And his father asked him, whether it was the same kind of earth that he saw in the brick-field. And Harry said, that he did not know what his father meant by the same kind of earth ; he saw a man dig earth, and dig it in the same manner.

*Father.* But is the earth in the garden of the same colour as that in the brick-field ?

*Harry.* No : that in the garden is almost black ; that in the field is yellow.

*Father.* Then they are not the same kinds of earth.

*Harry.* I thought all earth was alike.

*Father.* You find that it is not ; for you see, that all earth cannot be made to stick together with water.

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Harry went back to the garden, and, after having looked in a great many places for yellow earth, at last he saw some in the bottom of a hole, that had been dug some time before ; and he ran back, and asked his father's leave to dig some of it ; and, after he had gotten leave, he dug some of the yellow clay, and found that, when it was mixed with water, it became very sticky and tough, and that, the more it was mixed, and squeezed, and beaten with the spade, the tougher it became. He now endeavored to make it into the shape of bricks ; but he found that he could not do it : and Lucy asked him whether the brickmakers were as long making a brick as he was. 'No,' said he ; 'they have a little box made in the shape of a brick, without top or bottom, into which they put the clay upon a table, and with a straight stick, like a ruler, they scrape the clay even with the top of the box, and then lifting up the



box, they find the clay in the shape of a brick upon the table.' 'Harry, says Lucy, there is a carpenter in the house, at work for my mother; I will go and ask her, to get a box made for you: do you know by what name such a box is called, brother?' 'It is called a mould.'

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Lucy's mother let the carpenter make a brickmaker's mould for Harry; but the man could not begin until he knew what size it should be: how many inches long, how many inches thick it should be. Harry did not know what the carpenter meant: but Lucy, having always lived with her mother, who had been very kind to her, and who had taught her a great many things, knew what the carpenter meant: and, as she wished to have bricks of the size of those, with which her father's house was built, she went and measured some of the bricks in the wall, and finding that a great number of them were of the same length, she said to her brother, that she supposed they were all alike. Harry told her, that, as the brickmakers used but one mould, whilst he saw them at work, he supposed that they made a great number of bricks of the same size, and that the wall would not look so regular as it did, if the bricks were of different sizes.

Lucy therefore thought, if she could meas-

ure one brick, it would be sufficient. She easily found the length and the depth of a brick in the wall, but she did not at first know how to find the breadth, as the bricks lying upon each other, prevented her from seeing their breadth ; but Harry showed her at the corner of the wall that the breadth of the bricks could be seen ; she measured carefully, and found the length to be nine inches, the breadth four inches, and the depth two inches and a quarter. So the carpenter, when he knew the dimensions of the mould, made it, and Harry placed a flat stone upon two large stones, to serve for a table, and he and Lucy made several bricks : but they were a long time before they could make them tolerably smooth, as they stuck to the mould, unless the mould was wetted. They were very happy making their bricks, but they did not know how they should burn them, so as to make them hard, but they were determined to try.

It was eight o'clock in the evening, before they had finished ten bricks, and they were called in, and their mother gave them some bread and milk for their supper, and sent them to bed.

The next morning Harry and Lucy got up as they did before ; and their father and mother gave them leave to go and look at the bricks they had made ; and Harry felt that they were a little harder than they were the night before ; and Lucy thought that burning them would make them softer ; for she had

seen butter, wax, pomatum, and sealing-wax, all made soft by heat, but she did not remember seeing anything made hard by heat. But Harry put her in mind of the crust of pies, which is soft and tough, like clay, before it is baked, and which grows hard and brittle by the heat of the oven : and he told her that the iron, of which the blacksmith made the horse's shoe, when he blew the bellows, was hard and black, before it was put into the fire, but that it became red, when it was sufficiently heated, and so soft, that the smith could hammer it into what shape he pleased.

Lucy believed what her brother said, but was resolved to beg, that her mother would take her to see red-hot iron, and a brick-kiln, which Harry told her was the name of the place in which bricks were burnt.

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Whilst they were eating the breakfast, which their mother gave them, Harry asked his sister, what she had been doing the day before, when he was out with his father ; and Lucy told him all she had seen in the dairy, and when she was out walking. When they had done breakfast, his mother lent Harry one of Mrs. Barbauld's little books for children, and let him read the story of the poor blind fiddler, with which Harry was very much pleased ; and then she let Lucy read the following story.



A man, riding near the town of Reading, saw a little chimney-sweeper lying in the dirt, who seemed to be in great pain, and he asked him, what was the matter ; and the chimney-sweeper said, that he had fallen down, and broken his arm, and hurt his leg, so that he was not able to walk ; and the man, who was very good-natured, got off his horse, and put the chimney-sweeper upon it, and walked beside the horse, and held the boy on till he came to Reading ; and when he came to Reading, he put the boy under the care of an old woman, whom he knew

there, and he paid a surgeon for setting his arm, and gave the woman money, for the trouble which she would have in taking care of the boy, and the expense which she would be at in feeding him, till he should be able to work again, to earn money for himself ; and then the man continued his journey till he got to his own home, which was at a great distance. The boy soon got well, and earned his bread by sweeping chimneys at Reading.

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Several years after that time, this same good-natured man was riding through Reading, and his horse took fright upon a bridge, and jumped with the man upon his back into the water ; the man could not swim, and the people who were on the bridge and saw him tumble in, were afraid to jump into the water, to pull him out : but, just as he was ready to sink, a chimney-sweeper, who was going by, saw him, and, without stopping a moment, threw himself into the river, and seizing hold of him, dragged him out of the water, and saved him from being drowned : and when the man was safe upon the bank, and was going to thank the man who pulled him out of the water, he recollected that it was the same chimney-sweeper, whom he had taken care of several years before, and who had hazarded his own life, to save that of his benefactor.





When Lucy had done reading, her mother asked Harry which he liked best, the man who had taken care of the chimney-sweeper, whom he did not know,—or the chimney-sweeper, who had saved the life of the man whom he knew, and who had taken care of him when his arm was broken.

Harry said he liked the chimney-sweeper best, because he was grateful, and because he ventured his own life, to save that of the man who had been kind to him : but Lucy said, she liked the other man best, because he was humane, and took care of a poor

little boy, who had nobody to take care of him, and from whom he could never expect to receive any benefit.

This is the history of Harry and Lucy for two days. The next part will be the history of another day, when Harry and Lucy were a year older.

[The words in the following Glossary are used in the several parts of HARRY AND LUCY, and little children will do well to learn their meaning carefully.]

# GLOSSARY :

OR,

DICTIONARY OF WORDS.

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## Advertisement.

THE author does not pretend, that this glossary contains full and accurate definitions. He is well aware of the difficulty of such an undertaking ; and indeed is fully satisfied, that nothing is properly a definition, which does not contain a perfect enumeration of all the particulars, which relate to the subject in question. What he aims at, is to give a popular meaning of the words which he has selected, and at the same time, to point out the necessity of accuracy, and of referring to the original root, from which words are derived ; but above all, to excite in children an appetite for knowledge.

All objects of the senses, about which they inquire, should be submitted to the examination of children ; their obvious qualities, names and parts, should thus be rendered familiar to them. This glossary should first be read to children, a little at a time ; and it should be made a subject of conversation with

them ; afterwards they will read it with more pleasure. Young children do not read to gratify their curiosity ; their chief pleasure from books arises, at first, from success, in having conquered the difficulty of reading.

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*Abstain.* To abstain, not to do a thing that one is inclined to do.

*Accept.* To receive with pleasure.

*Agility.* Activity ; the being able to move quickly and with ease ; to run, and jump, and dance well.

*Air-pump.* A machine for trying experiments upon air. An air-pump will be described to little people in another place.

*Associate.* To join, to connect. Things that happen at a time when we feel pleasure or pain are remembered together at another time. We remember the faces, and dress, and voice of those from whom we have received pleasure ; and we remember what we saw or heard, at any place, that we liked much, or that we disliked ; and we remember things merely because they happened on the same day, or on the same week. Some people remember things best by thinking of the places, and some by thinking of the time when things happened ; others, by the pleasure or pain they felt at the time when things happened.

*Attention.* To be attentive is to think of what we are about.

*Attracted.* To be attracted by anything is to be drawn towards it, as a piece of iron is drawn or moved towards a magnet, which is placed near it ; or as a light piece of paper is made to fly towards a piece of sealing-wax, or a bit of amber, or a tube of glass, when they are rubbed by the hand, or certain other substances.

My little boy, or girl, when you read this, ask the person who teaches you, to show you a magnet, or to let you try these experiments.

*Barometer.* Little girls and boys may see barometers in many places, but they cannot understand them, without taking a great deal of pains.

*Behavior.* The manner in which people act.

*Belong.* What is a person's own belongs to him.

*Blacksmith.* A man who makes things of iron.

*Blow.* To blow is to make air move, and when air moves it is called wind.

*Bottom.* The lowest part of a thing.

*Breaches.* Gaps or holes made in anything.

*Brittle.* Easily broken.

*Button-mould.* Some buttons are made of metal ; others are made of cloth, or thread wound round pieces of wood, or horn, or bone, or ivory. These pieces are called moulds.

*Moulds* are sometimes solid, and sometimes hollow. Silver spoons are formed with a hammer upon a solid iron mould. Ornaments of plaster of Paris, or alabaster, and of



wax, and of clay, and other materials are cast or worked in hollow moulds. Metal and plaster statues are cast between a hollow and a solid mould. Do you understand that, my little pupil ?

*Bubbles* are thin hollow globes, filled with air. Bubbles, blown from a tobacco-pipe dipped in soap-suds, show beautiful colors, when the sun shines on them. Such bubbles could not be made with water only, but the addition of soap makes a clammy, or sticky liquor, that can be spread out by blowing air into it. The air in soap-bubbles swells by heat, and bursts its covering.

*Buzzed.* To buz ; to make a noise like that which a fly makes with its wings.

*By degrees.* Not all at once. The word degree properly means a step ; by degrees, step after step.

*Care.* To take care of a person is to hinder him from being hurt.

*Clasped.* To clasp is to hold fast round anything.

*Clean.* What is not dusty, sticky, stained, greasy, &c. ; and what has not or does not look as if it had a disagreeable smell.

*Cobwebs.* Nets made by spiders, to catch flies.

*Collected.* To collect is to gather together.

*Conduct.* People, by thinking whether they are going to do right or wrong, can judge and determine how they ought to act ; their judgment *conducts* or leads them. Judging

wisely, and acting accordingly, is good conduct, the contrary is bad conduct.

*Consented.* Agreed to what was asked.

*Considerable.* A quantity worth considering or attending to.

*Conversation.* Answering what people ask ; listening to what others say ; hearing from others what they know, and telling them what we know.

*Compared.* To compare is to consider or think of things ; to find out in what they are like one another, and in what they are unlike.

*Correct.* To correct is to alter for the better.

*Counted.* Looked or felt to know how many there were.

*Cylinder.* What is round like a pencil, or a rolling-stone, or a candle. A cylinder may be hollow, as that part of the socket of the candlestick into which the candle is put.

*Deal.* A quantity ; also the name of pine boards in England.

*Determined.* To determine is to think of, and resolve to do a thing.

*Dimensions.* The sizes of the different parts of any thing.

*Directly.* Soon.

*Disappointment.* When any thing which we expect does not happen, we feel disappointed. Several words in English begin with *dis* ; this syllable *dis* sometimes means, different from ; as in dis-appointment dis-incli-

nation, dis-joint, dis-prove ; and it sometimes means different ways, as dis-sever, dis-play.

*Distinctly.* In a distinct manner. When things are separate from one another, we see them, and can consider them one by one.

*Diverted.* Turned aside. To divert also means to amuse, because amusement turns aside our thoughts from applying too closely to any thing. *Di*, in *divert*, and several other words, has the same meaning as *dis*.

*Dry.* What is not wet.

*Earned.* To earn is to get any thing for working for other people.

*Employ.* To employ oneself is to do something.

*Endeavor.* To try to do a thing.

*Entertaining.* To entertain is the same as to amuse ; it is to give pleasure to the mind, by engaging the attention to something that is agreeable.

*Entirely.* Entire is what is not broken or divided ; what is whole : any thing is said to be done entirely, when every part of it is finished.

My little pupils will observe, that to explain one word, it is necessary to make use of others, that are supposed to be understood by those, whom we are teaching. Sometimes the words which we use are not understood. You must then ask the meaning of them from your father or mother.

*Exactly.* With great care.

*Examining.* To examine is to consider

attentively ; to look at every side and every part of any thing ; to consider the truth of facts, and to judge of reasons for or against any opinion.

*Explain.* To explain is to make a person understand what he reads, or what is said, or what is shown to him.

*Experiment.* A trial (see Johnson's Dictionary.) The word trial sometimes means only a trial in a court of justice.

*Evaporate.* To evaporate is to turn some fluid into steam. Steam, when it is very hot, is not visible.

*Fear.* What we feel when we expect something will hurt us.

*Feeling.* Nobody can be told what feeling is : every one knows their own feelings, but they cannot tell exactly what others feel.

*Fill.* To put as much into a thing, as it can hold.

*Floating.* To float means not to sink in a fluid.

*Fluid.* Our little pupils must ask the persons who teach them, to show them different fluids, and to let them touch them. Things can sink or float in fluids ; they do not sink perceptibly into solids, unless they are very sharp or heavy. Fluids fill hollow vessels of all shapes ; and they can be poured from one vessel into another. *Solid*, besides meaning what is not fluid, means what is firm, or steady, or strong : we say a solid founda-

tion, solid sense, solid timber ; that which is not hollow.

*Forge.* A place where smiths heat iron, and form it into different shapes.

*Form.* Shape, figure.

*Former.* The first of two things which have been mentioned.

*For instance.* Here the writer of the book wants to explain one thing, by mentioning something else that is like it. *For example* has the same meaning as *for instance*.

*Full as much.* Here the word *Full* means *Quite*—quite as much.

*Globes.* There are two sorts of globes, terrestrial and celestial : terrestrial globes represent the shape of the earth, and the situation of different countries : celestial globes show the situation of the stars in the sky.

*Habit.* When we have done any thing a great many times, it becomes easy to do it ; there are some things which, from habit, become so easy to be done, that we do not seem to think of them when we are doing them. Some habits are good, and some bad ; for instance, the habit of attending to what we are about, is good ; tricks, on the contrary, are bad habits.

*Hacks.* Brickmakers build their bricks, before they are burned, in long rows, and cover them with turf or straw, to protect them from the rain, and place them in such a situation, as will expose them to the wind and sun, till



they are sufficiently dry for the *Kiln*. These rows of bricks are called Hacks.

*Happy*. People know when they feel happy or unhappy. Happiness depends upon feelings, and feelings cannot be exactly described by words.

*High*. What is at a distance from the ground. Things are said to be high, when compared with things that are lower than themselves, tho' they are low, when compared with other things. A boy of five years old is high, or tall, when compared with a child of a year old : and the same boy is low when compared with a boy of fifteen. A table is high when compared with a stool, but low when compared with a chest of drawers.

*Honest*. A person is honest, who tells truth, and who does not take or keep what belongs to other people.

*Impression*. When any thing hard is pressed upon something that is not elastic, or springy, but which is much softer than itself, it sinks into it, and leaves marks upon it, as a seal does upon bees-wax, or upon sealing-wax softened by heat. The marks thus made are called impressions, because they are impressed upon what receives them. Whatever makes us attend, leaves a remembrance in the mind, which is called an impression, because this remembrance is something like the effect made by one body upon another.

*Issued*. 'To issue is to go out of.

*Joined.* Put close together ; made to stick together.

*Kept.* What is not thrown away.

*Kiln.* A kind of oven, or furnace, in which lime, and bricks, and potter's ware are burned. There are several different kinds of kilns.

*Lamed.* Made not able to move without pain or difficulty.

*Latter.* The last of two things, as the *former* is the first of two things.

*Leave.* To have leave is to be let to do any thing.

*Lever.* A bar of wood or metal, used to lift heavy things. When little boys and girls grow older, the different forms and uses of levers will be explained to them.

*Market.* A place where people meet, on particular days, to buy and sell ; both the place and the day are called the market. People say, ' To-morrow is the market,' meaning the market-day ; or, ' This is the market,' meaning the market-place. A *Fair* is a very large market, that is held on particular days in the year. This is applicable only to England.

*Measured.* To measure is to find out the size of any thing.

*Mellow.* Soft from being ripe.

*Melted.* When any thing solid is made fluid by heat, it is said to be melted.

*Microscope.* My little friends must grow older before they can understand a microscope, but they may perhaps be let to look at one,

and see how large the parts of plants appear, when seen through the glass of a microscope.

*Minded.* To mind is to think of a thing, to turn one's attention, one's mind to a thing.

*Mistake.* To mistake is, to take one thing for another ; to mistake the road ; to mistake what is said ; to mistake the meaning of any thing. *Mis*, in mistake, means wrong or ill.

*Mixed.* To mix is to put things together, so as to make them touch in as many of their parts as we can.

*Moderate.* Without violence. Moderate properly means what is done by a measure. A moderate quantity : what is usually measured or given for any particular purpose. A pint of milk is a moderate quantity for one person, but a pail full would be an immoderate quantity.

*Neatly.* Neat is what is clean, smooth, and in order.

*Nosegay.* A bundle of flowers.

*Observed.* To observe is to mind what we see, and hear, and touch.

*Opportunity.* Fit place, or fit time. (See Dictionary.)

*Orrery.* A machine for showing the motions of the moon and planets.

*Pay.* To give money for any thing.

*Pence.* Two half-pence make a penny ; pence also means more pennies than one.

*Perceived.* To perceive is to observe some particular thing.

*Print.* To print means properly to make an impression. The print of a man's foot in

the sand means the mark or impression of a man's foot in the sand ; the print of a seal means its impression. Prints, a kind of pictures, are impressions upon paper, &c. of lines, or figures carved upon copper : these lines are filled with ink ; and, when the copper is pressed by a machine for that purpose on paper, on silk or vellum, the ink quits the lines in the copper, and sticks to the paper, &c. The beautiful prints in Bewick's history of birds and quadrupeds are carved on wood. In general, prints are engraved on copper, and are therefore called engravings or copper-plates.

*Paddle.* A small tool, with which weeds are pulled up ; it also means a kind of oar, with which boats are moved.

*Pebbles.* Small stones that have been rounded by being rubbed together by the motion of a river or the sea.

*Peculiar.* What belongs to a particular thing, person, place, or nation.

*People.* A number of persons. *The people* means the inhabitants of a country.

*Planted himself.* To plant is to put a vegetable into the earth to make it grow ; it sometimes means to drive one thing firmly into another. To plant oneself in a place means, to place oneself in such a manner, as to show that we mean to stay there some time.

*Pleasure.* Pleasure is felt : it cannot be described by words.

*Present.* At present ; what is doing or passing *now*. Every thing that we think of, or

that we perceive by any of our senses, must be done or must pass at some time. Time may be either present, past, or to come. What is to come is also called future. When you learn grammar, my little friends, you will read of the present tense, the past tense, and the future tense. *Tense* means *Time*.

*Prevent*. To hinder a thing from being done.

*To prevent* properly means to come before.

*Proceed*. To go forward.

*Process*. Method of doing a thing. It properly means the going forwards of any thing.

*Pro*, at the beginning of a word, means *for*, *before*, *in the place of*, *forward*.

*Particles*. Small parts.

*Property*. What belongs to a person or to a thing. 'My father's horse,' means the horse that belongs to my father, or that is my father's property. There is another meaning of the word property : we say, 'It is a property of lemons to have a sour taste.' Acidity, or sourness, is a property of lemons, and of vinegar, and of sorrel, and of crab apples. 'To live longer than other animals without water, is a property of the camel.'

*Punctuality*. Exactness in doing what we have intended to do, or what we have said we would do.

*Punished*. To punish is to be made to feel pain for doing what is wrong.

*Purposely*. Designedly ; intending to do it.

*Promise*. To promise, is to tell a person



that we will do something at a future time which they wish should be done. People may say, that they intend to do a thing, without promising. When people promise, they speak as if they expected that the persons who hear them should understand that they firmly resolved to do the thing which they say, and that others might afterwards, if they failed to keep their word, think that they were not to be trusted or depended upon. If we always speak truth, people *must* believe us : if we do not speak truth always, even those who love us best *cannot* believe us.

*Quantity.* Size or number.

*Quarter of the sky.* Quarter properly means fourth part of any thing : but it sometimes means not exactly the fourth part, but some parts separate from other parts, as, 'The roads are bad in that quarter of the country : ' — 'Go to that quarter of the garden : ' — 'He lives in a different quarter of the country.'

*Readily.* Easily ; quickly.

*Recollect.* To recollect is, to collect again from one's memory. *Re*, at the beginning of words, sometimes means backwards, and sometimes means again,—as, to re-peat, to re-turn.

*Repair.* To mend ; also to go to a place.

*Revolution.* The going round of any thing to the place from which it set out.

*Round.* What has no corners, or angles, is usually called round, though it may not

be perfectly round. A globe is a figure round in all directions.

*Set.* To set means to place ; setting of the sun means its disappearing in the evening. You cannot yet understand what is meant by the motion of the earth, which occasions sun-rise and sun-set.

*Set on fire.* To put fire to any thing, so as to make it burn.

*Shadow.* My little friends, — hold a book, or any thing else, between the candle and a wall, or between the sun and a wall, and you will see, that what is so held prevents the light of the candle or of the sun from going to or reaching the wall : therefore that part of the wall, from which the light of the sun or candle is kept, is dark. If any hole is in the thing which you hold in your hand, the light will pass through that hole to the wall, and the wall will be light in that place. On the contrary, if a thread, or even a hair, hang at the edge of what you hold, that hair will hinder the light from coming to the wall, and a part of the wall, in the shape of that hair or thread, will be dark.

The shadow you perceive is not a thing ; it is only the want of light on some place.

*Shed.* A roof, that is held up by posts, or rails, instead of walls ; or what appears like a roof.

*Shoes.* What are put upon feet, to hinder them from being hurt by the ground.

*Shop.* A place where people work, or where things are sold.

*Soft.* What you can press your finger into ; what is not hard.

*Solid.* Look for the word fluid.

*Soot.* Smoke collected in small pieces ; condensed steam, or vapor of oil, grease, wax, pitch, tar, or turpentine, resin or rosin, and of various other substances. You have learned the meaning of the word condensed.

*Stamps.* Tools of wood, or metal, carved with different figures. These stamps are pressed upon different substances, to make impressions upon them.

*Stalk.* That part of a plant upon which flowers or fruits grow.

*Steam.* Vapor, caused by heat.

*Stem.* The trunk of a plant, that which rises immediately from the root.

*Stick.* A piece of wood ; a small long piece of any thing, as a stick of sealing-wax, a stick of brimstone.

*Sticky.* What will not fall easily from your hands, when you attempt to let it go.

*Still.* In this place *still* means continual. Sometimes it means to be at rest.

*Store-room.* A place where things are laid by to be kept safe. Things laid by for future use are called stores.

*Stoutly.* Strongly ; with courage.

*Straight.* What is not bent ; what is even, like a ruler.

*Subject.* What a person is talking, or thinking or writing about.

*Sufficiently.* Enough.

*Supposing.* To suppose is to imagine that a thing has happened, or will happen, though perhaps it has not, or may not happen ; as, Suppose the house were to tumble down, it would break the furniture to pieces. Suppose that we were to have plum-cake at tea, would you give some of your share to your sister ?——Now, I hope, my young friends, that this last supposition will soon be true.

*Stretched.* Pulled or drawn to a larger size than what it usually is.

*Take notice.* To observe ; to pay attention to any thing.

*Tallow.* The fat of animals. There is a tree in America, which produces a substance like tallow.

*Taught.* To teach is to tell people how to do what they do not know how to do.

*Thermometer.* An instrument for showing the heat of the air, and of other bodies. The thermometer, barometer, orrery, and air-pump, will entertain young people very much, when they have knowledge sufficient to enable them to understand their uses, and the manner in which they are made.

*Thunder-storm.* A storm of thunder : a storm generally means violent wind ; it also means snow, hail, and thunder.

*Trust.* To trust people is to believe, and depend upon their truth and honesty.

*Truth.* To tell truth is, to tell what we

know about any thing without adding to it, and without concealing or hiding any thing.

*Turf.* That part of the ground that is covered with grass. Turf, in some places, means a kind of earth, mixt with the roots and leaves of decayed vegetables, which is used for firing.

*Udder.* A bag under the belly of a cow, into which the cow's milk comes.

*Understand.* To know the meaning of any thing.

*Useful.* What is of advantage ; what contributes to our comfort, or convenience, or pleasure.

*Valuable.* What people wish to keep, or obtain ; what they like, or love, or what can be sold advantageously.

*War.* People fight with one another when they think themselves injured, or when they are angry. When the people of one country fight against the people of another country, it is called war.

*Wistfully.* As if he wished for something. Wistfully is a word that is not often used.

END OF PART I.





**HARRY AND LUCY.**

**PART II.**

## HARRY AND LUCY.

## PART II.



AFTER the summer was past, and after the autumn and winter were past, another spring came.

Harry and Lucy were now each of them a year older.

And during the year that had passed, they were become taller and stronger, and had learned a great many things that they did not know before.

They had learned to read fluently ; and they were therefore able to entertain themselves a little, during the winter evenings, with reading short stories in books, which their mother gave them ; and they had learned a little arithmetic, and could cast up sums in addition, and could subtract.

And they had each of them a little garden. Harry dug the ground when it was necessary, and Lucy pulled up weeds, and helped to wheel them away in her little wheelbarrow ; and assisted in sowing seeds of different sorts, and in planting the roots of flowers.

In the summer, she and Harry carried wa-



ter to water the plants and flowers, which they had set and sown in the spring. And they had not only planted flowers, and sown small salad, but Harry had also a crop of peas, and a crop of potatoes, in his garden : for his father had seen that he was industrious, and for that reason he gave him a piece of good ground to be added to his garden ; and, as it had been grass-ground for some time, it was so hard that Harry was not able to dig it. But his father had it dug roughly for him, and he had a cartload of manure laid upon it. Harry had observed very attentively how his father's la-

borers had set potatoes ; and in the beginning of the month of March he dug his ground over again, and marked it out into ridges, with stakes and a line, and spread the manure upon the ridges, leaving sufficient space between the ridges for the furrows. He then cut some potatoes, which his father had given him, into small pieces, to plant in the ground for sets. He took care to cut them, so that each piece should have an eye in it ; that is to say, that each piece should have one of those little black spots in it, which contain the root of the potato ; for, after the piece of potato has been some time in the ground, it rots away, and the root unfolds, and long fibres spread into the earth.

He scattered these pieces upon the manure, at eight or ten inches from each other ; and then he dug earth out of the furrows, that lay between the ridges, and covered the bits of potatoes and the manure with them, laying earth over them both to the depth of three or four inches. When he had made any mistake, or had not done the work well, his father assisted him, and showed him how to do it better.

The rain in the following months, and the heat of the sun in the beginning of summer, had contributed to the growth of Harry's crop, and in the middle of July he had some fine young potatoes fit to eat.

About this time of the year the weather is generally very hot ; and one day as Harry and his sister were sitting under the shady

tree, which was mentioned in the former chapter, picking some cowslips for their mother, Harry observed that the shadow of the tree reached almost round the stem, and he had seen in the morning when he was at breakfast, that the shadow of the tree fell only on one side of it. He asked his father, who was passing by the reason of this, and his father took him to the door of the house, and desired him to look where the sun was ;—and he saw that it was opposite the door, and very high in the sky. ‘ Take notice, Harry, where you see the sun now, and observe where you see it this evening, when the sun is setting.’

Harry said he knew where the sun set—that he could not see it from the hall-door ; but that he could see it from that end of the house, which was at the right hand of the hall-door, as you go out.

*Father.* Did you ever observe where it rises ?

*Harry.* Yes ; it rose this morning at the other end of the house.

*Father.* It did so.—Now do you know where are the South, and the North, and the East, and the West ?

*Harry.* No ; but I believe the side of the sky where the sun rises is called the East ?

*Father.* It is so ; and the side where it sets is called the West. Now you may always know the South and the North, wherever you are, if you know where the sun either rises or sets. If you know where it rises,

stand with your left hand towards that part of the sky, and then the part of the sky before your face will be the South, and that part of the sky behind your back will be the North.

In the same manner, if you know where the sun sets, turn your right hand towards that place, and the part of the sky opposite to you will be the South. But, Harry, you must remember that there are only two days in the year, when the sun sets exactly in the West, and rises exactly in the East.

*Harry.* What days are those, father?

*Father.* It would be of no use to you now to know the names of those days; but, when one of them comes, I will let you know it. On that day the sun rises exactly at six o'clock in the morning, and sets exactly at six o'clock in the evening.

Father, said Harry, I have observed several times, that my shadow in the morning and in the evening is very long; but in the middle of the day I can scarcely see my shadow.

*Father.* You must think about it yourself, Harry; for, if I tell you every thing that you want to know, without your taking the trouble to think, you will not have the habit of thinking for yourself; and without being able to think for yourself, you will never have good sense.

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The bricks, which Harry and Lucy had made the year before, had all been *melted*



*away* (as the workmen say) by the rain, or broken, because they had not been burnt ; but Harry had dug some tough yellow clay, of a proper sort, in the month of November, before the usual frosts of the winter had begun ; and Harry mixed it well with his spade, and Lucy picked out the little pebbles with a small paddle, and the frost made the clay *mellow*, as the workmen call it. And in the spring Harry made nearly six hundred bricks, and built them into hacks, and covered them with turf, which his father had let him pare off the surface of the ground. And Harry's father, who had been much pleased with his good behavior and industry, came to the tree where he was at work, and asked him if he would like to go to the brick-field, to see how bricks were burnt. Lucy wished much to go with them, and she ran and asked her mother to let her go ; her mother very cheerfully consented, and said she would go along with her.

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Whilst Lucy and her mother were getting ready to go, Harry ran to his garden, and dug some of his fine young potatoes, and put them into a basket which he had of his own, and returned to the house ; and his father asked him what he intended to do with them.

Sir, says Harry, last year, when I had spoilt the poor man's bricks, I promised, that I would make him amends, and I determined,



when I set my potatoes, to let him have the first of them that were fit to be dug, as I was told that *early* potatoes were more valuable, than those that *came in* later.

*Father.* But you will not be able to carry such a heavy load so far.

I will try, said Harry.

He was able to proceed but a little way with his load without resting.

What could he do ?

His father was willing to assist him, as he had shown honesty and truth in keeping his promise, and good sense in the means, which

he had taken to make the brickmaker amends for the injury which he had done him. He asked a farmer, whom he knew, and who was going by with a cart, to take the basket into his cart, and to leave it in the brick-field which was at the road-side.

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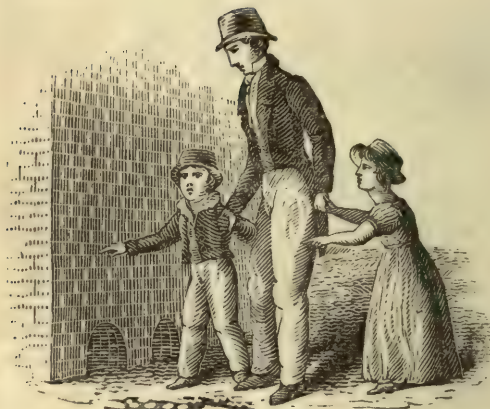
By the time they had reached the brick-field, to which they were going, and to which there was a pleasant walk through the fields, the farmer, who went by the road, had gotten with his cart to the same place.

Harry thanked him, took up his basket, and marched stoutly into the place where the brickmaker was at work.

The man knew him again, and was much pleased with Harry's punctuality. He took the potatoes out of the basket, and said that they were worth full as much as the bricks, that had been spoilt.

Harry's father asked the man, to show him how he burned his bricks, to make them hard ; and the man said, he was just going to set fire to a kiln of bricks, and that he might see how it was done.

The kiln was made of the bricks, that were to be burned : these bricks were built up one upon another, and one beside the other, not quite close, but so as to leave a little room on every side of each brick ; and, in the middle of the kiln, near the bottom, there were large holes filled with furze bushes.



The whole kiln was as large as a large room ; and the man went to his house for a few lighted coals, and he put them under the furze, which took fire and blazed, and the smoke came through the openings, that were left between the bricks, and the heat of the fire came through them also, and heated the bricks ; and the man told Harry's father, that he should supply the kiln with furze and keep the fire strong for six days and six nights, and that then the bricks would be sufficiently burned.

Harry now said, that he was afraid, that he should not be able to build a kiln for his bricks ; for he was grown wise enough to know, that it required time to learn to do things, which we have not been used to do. And he asked the brickmaker, whether he thought he could build his bricks so as to be able to burn them. And the man told him, that he believed he could not ; but he said, that on some holiday he would go to the place where Harry's bricks were, and would show him how to build a nice little kiln, if Harry's father would give him leave.

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Harry's father accepted this good-natured offer ; and Harry plainly perceived, that good conduct makes friends, and that a poor brick-maker may be of use even to persons, who are not obliged to work for their bread.

Whilst they were talking, Lucy was looking about, and examining every thing in the brick-field ; and she observed, that, at the farthest part of the field, some white linen was stretched upon the grass to dry ; and she saw several bits of black dirt lying upon the linen. They did not stick to the linen, but were blown about by the wind, as they were very light.

Lucy picked up some of these black things ; and when she showed them to her mother, her mother told her, that they were bits of

soot, which had been carried by the wind from the brick-kiln.

But, mother, said Lucy, I don't see any chimney belonging to the brick-kiln ; and soot, I believe, is always found in chimneys.

*Mother.* No, my dear, soot is smoke cooled ; and wherever there is smoke, there is soot. A great quantity of thick smoke rises from a brick-kiln, or, to speak more properly, a great quantity of smoke is carried upwards by the hot air that rises from a brick-kiln, and, when this smoke cools, parts of it stick together, and make what we call soot, which falls slowly to the ground. This is some of it, that has fallen upon the white linen ; and you see it because it is black, and the linen, upon which it has fallen, is white.

*Lucy.* Why does it fall slowly ?

*Mother.* Because it is light ; if it were heavier, it would fall faster.

*Lucy.* What do you mean by light and heavy ?

*Mother.* You cannot yet understand all that I mean by those words ; but, if you take two things which are nearly of the same size in your hands, and if one of them presses the hand, in which it is held, downward, more than the other does, that may be called heavy, and the other may be called light. You must observe, Lucy, that they can be called heavy or light only as compared together or *weighed* in your hands ; as, for instance, if you take a large wafer in one hand,



and a wooden button-mould of the same size in the other, the button-mould would be readily perceived to be the heaviest ; you would therefore say, that the button-mould is heavy, and the wafer is light.

But if you were to take the button-mould again in one hand, and take a half-dollar in the other, you would call the half-dollar heavy, and the button-mould light. And if you were to lay down the button-mould, and were to take a dollar into your hand instead of it, you would find the half-dollar would appear light, when *compared* with the dollar.

*Lucy.* But, mother, what do you compare the soot with, when you say it is light ?

*Mother.* I compare it in my mind with other things of nearly the same size, as bits of saw-dust or bits of gravel ; but I cannot yet make you entirely understand what I mean. When you have learned the uses and properties of more things, and their names, I shall be better able to answer the questions you have asked me upon subjects, which I cannot explain to you now.

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As they returned home, they saw a poor little girl crying sadly, and she seemed to be very unhappy. And Lucy's mother said to her,—Poor girl ! what is the matter with you ? What makes you cry so ?

O, madam, said the little girl, my mother sent me to market with a basket of eggs, and



I tumbled down, and the eggs are all broken to pieces, and I am very sorrow for it ; for my mother trusted them to me, as she thought I would take care of them ; and indeed I minded what I was about, but a man with a sack upon his back was coming by, and he pushed me, and made me tumble down.

*Mother.* Will your mother be angry with you, when she knows it ?

*Little girl.* I shall tell my mother, and she will not be angry at me ; but she will be very sorry, and she will cry, because she is very

poor, and she will want the bread, which I was to have bought with the money, for which I should sell the eggs, and my brothers and sisters will have no supper.

When the little girl had done speaking, she sat down again upon the bank, and cried very sadly.

Little Lucy pulled her mother's gown, to make her listen to her, and then she said softly, — Mother, may I speak to the poor little girl ?

*Mother.* Yes, Lucy.

*Lucy.* Little girl, I have some eggs at home, and I will give them to you, if my mother will let me go for them.

My dear, said Lucy's mother to her, our house is at a distance ; and, if you were to try to go back by yourself, you could not find the way ; but, if the little girl will come to-morrow to my house, you may give her the eggs ; she is used to go to market, and knows the road. In the mean time, my poor little girl, come with me to the baker's at the top of the hill, and I will give you a loaf to carry home to your mother : you are a good girl, and tell the truth.

So Lucy's mother took the little girl to the baker's shop, and bought a loaf, and gave it to her ; and the little girl thanked her, and put the loaf under her arm, and walked homewards, very happy.

As he was going over a stile, Harry dropped his handkerchief out of his pocket, and it fell into some water, and was made quite wet; and he was forced to carry it in his hand, until they came to a house, where his father told him he would ask leave to have it dried for him. And he asked the mistress of the house to let Harry go to the fire, to dry his handkerchief. And while he held it at the fire, Lucy said, she saw a great smoke go from the handkerchief into the fire, and her mother asked her how she knew it was smoke?

*Lucy.* Because it looks like smoke.

*Mother.* Hold this piece of paper in what you think like smoke, and try if you can catch any of those black things, that were in the smoke you saw in the brick-field.

*Lucy.* No, mother, it does not blacken the paper in the least, but it wets the paper.

*Mother.* Hold this cold plate in what you call smoke that comes from the handkerchief.

*Lucy.* Mother, I find the plate is wet.—

*Mother.* What is it then that comes from the handkerchief?

*Lucy.* Water. The water with which it was wetted, when it fell into the ditch.

*Mother.* What makes the water come out of it?

*Lucy.* The heat of the fire, I believe.

*Mother.* At tea to-night, put me in mind to show you water turned into steam, and steam turned into water.

When they had gotten home, Harry and Lucy went immediately, without losing any time, to cast up two sums in arithmetic, which they were accustomed to do every day.

Harry could cast up sums in common addition readily ; and Lucy understood the rule called subtraction ; and she knew very well what was meant by the words *borrowing* and *paying*, though it is not easy to understand them distinctly. But she had been taught carefully by her mother, who was a woman of good sense, and who was more desirous that her daughter should understand what she did, than that she should merely be able to go on as she was told to do, without knowing the reason of what she was about.

And after they had shown the sums, which they had cast up, to their mother, they sat down to draw.

Lucy was learning to draw the outlines of flowers, and she took a great deal of pains, and looked attentively at the prints she was copying. And she was not in a hurry to have done, or to begin another flower ; but she minded what she was about, and attended to every thing, that her mother had desired her the day before to correct. And after she had copied a print of a periwinkle, she attempted to draw it from the flower itself ; which she had placed in such a manner, as to have the same appearance as the print had, that she might be

able to compare her drawing from the print with her drawing from the flower.

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She found it was not so easy to draw from the latter as from the former ; but every time that she tried, it became easier. And she was wise enough to know, that it was better to be able to draw from things themselves, or from nature, as it is called, than from other drawings ; because every body may every where have objects before them, which they may imitate : and by practice they may learn to draw or delineate objects so well, as to be able to express upon paper, &c. to other people, whatever curious things they meet with.

The habit of drawing is particularly useful to those, who study botany ; and it was her love of botany, that made Lucy fond of drawing flowers.

She had a number of dried plants, the names of which she knew ; and she took great pleasure in the Spring, and in the beginning of Summer, in gathering such plants as were in flower, and in discovering, by the rules of botany, to what class, order, genus, and species they belonged.

Harry also knew something of botany ; but he did not learn to draw flowers. He was endeavoring, with great care, to trace a map of the fields about his father's house. He had made several attempts, and he had failed



several times ; but he began again, and every time he improved.

He understood very well the use of a map ; he knew that it was a sort of picture of ground, by which he could measure the size of every yard, or garden, or field, or orchard, after it had been drawn upon paper, as well as it could be measured upon the ground itself. He could also draw a little with a rule and compasses ; he could describe a circle, and make an equilateral triangle, and a right angle, and he had begun to learn to write.

After they had drawn and written for one hour, it was time for them to go and dress before dinner.

Harry's walk to the brick-field had made him very hungry, so that he ate heartily.

Whilst he was eating, his mother told him, that she intended to send him into the garden, after dinner, for some strawberries, that were just ripe ; and she advised him not to eat so much pudding, if he wished to eat strawberries.

Now Harry had learnt from experience, that, if he ate too much, it would make him sick ; he therefore prudently determined, not to have another spoonful of pudding.

A little while after dinner, Harry and Lucy went with their mother into the garden ; and Lucy was desired to gather six strawberries, and Harry was desired to gather four strawberries.

And when they were put together, Harry

counted them, and found, that they made ten. Lucy was not obliged to count them, for she knew by rote, or by heart, as it is sometimes called, that six and four make ten.

Each of them next brought five strawberries ; and Harry knew, without counting, that when they were put together they would make ten. And Lucy knew, that the parcel of strawberries, which they gathered first, which made ten, would, when added to the second parcel, which also consisted of ten, make twenty.

They now went, and gathered ten more. One gathered three, and the other gathered seven ; and this ten, added to the former number, made thirty. And they went again, and brought ten more to their mother : this ten was made up of eight and two ; and this ten, added to the thirty they had gathered before, made forty.

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Whilst they were eating them, Harry asked his sister if she knew what was meant by *ty* in twenty and thirty. Lucy laughed at him for supposing that she did not know it, and said her father had told her. Harry said, that he knew before, that *teen*, in the words thirteen, fourteen, &c. meant ten ; but he did not know that *ty* in twenty, and thirty, &c. meant ten. And he said he did not know, why ten should have three names, ten, teen, and ty.

Lucy said, she could not tell ; but they ask

ed their father ; and he told them, that ten meant ten by itself, without any other number joined to it ; but that teen meant ten with some other number joined to it ; and he asked Harry what thirteen meant.

*Harry.* I believe that it is three and ten ; for three, joined or added to ten, make thirteen. Fourteen is plainly four and ten ; fifteen, five and ten. But why, father, is it not threeteen, instead of being called thirteen ?

*Father.* Because it is easier to say thirteen, than three-teen.

*Lucy.* But why is it called twelve ? It should be two-teen.

*Harry.* And eleven, father, should be one-teen.

*Father.* I cannot now explain to you, my dear, the reason why we have not those names in English ; but you perceive, that it is easy to remember the names of fourteen, fifteen, sixteen, &c. because we remember that four, five, six, come after one another, and we perceive, that all that is necessary is to add teen to them. You see that fourteen means four and ten—four added to ten.

*Harry.* But does ty in forty mean four added to ten ?

Lucy replied, that it did not.

*Father.* No—it means four times ten ; not ten added to four, but ten added together four times. And fifty means ten added together five times. So you see, that it is useful to have three names for ten, which differ a little

from one another, but which are also something like each other ; for teen is like ten, and ty is like teen. Teen is always used when ten is added to any number, as far as nineteen ; and ty is always used when more tens than one are counted, as far as a hundred.

*Harry.* Then twenty should be two-ty ; and thirty should be three-ty.

*Father.* I told you before, my dear, that thirteen is used instead of three-teen, because the former word is more easily pronounced than the latter. Thirty is used instead of three-ty for the same reason.

*Harry.* But why is not twenty two-ty ?

*Father.* Twenty is made up of ty and of twain, a word that was formerly used for two ; the word twain, joined to ty, makes twainty, which, when spoken quickly, sounds like twenty.

*Harry.* But, father, will you tell me another thing ?

*Father.* No, Harry, we have talked enough about numbers at present ; you will be tired by thinking any longer with much attention, and I do not wish that you should be tired, when you attend to what you are about. Thinking, without tiring ourselves, is very agreeable ; but thinking becomes disagreeable, if we tire ourselves : and as thinking with attention is useful and necessary, we should take care, not to make it disagreeable to ourselves.

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It was now tea-time ; and Harry and Lucy usually supped at the same time that their father and mother drank tea ; so that they had an opportunity of hearing many useful and entertaining things, that passed in conversation : and Lucy, recollecting that her mother had promised to tell her, at tea-time, something more about smoke and steam, put her in mind of what she had promised. Then her mother called for a lighted wax candle, and for a lighted tallow candle, and she desired Lucy to hold a cold plate over the wax candle, and Harry to hold another cold plate over the tallow candle, and in a short time a considerable quantity of smoke, or soot, was collected upon each of the plates. Another cold plate was held over the tea-urn, in which water was boiling, and from which there issued a large quantity of steam, or vapor of water. This steam was stopped by the plate, which, by degrees, was covered with a number of very small drops, not so large as the head of a miniken pin. After the plate had been held over the steam a little longer, these drops became larger—they attracted one another ; that is to say, one little drop was joined to another, and made a large drop ; and so on, till at length the drops ran so much together, as to lose their round shape, and to run over the plate. Harry and Lucy were much entertained with this experiment. Harry observ-

ed, that the vapor of water was very different from the vapor of a candle.

*Father.* I am very glad to find, that you have so readily learned something of the meaning of the word vapor, which I have purposely made use of in the place of the word steam ; but you are mistaken, my dear, in saying vapor of a candle. Lamp-black, soot, and smoke, are formed from the vapor of the oily parts of burning bodies. Formerly people made use of lamps instead of candles, and the soot of those lamps was called lamp-black, though it should properly be called oil-black. Now pray, Harry, do you know the meaning of the word evaporate ?

*Harry.* I believe it means being turned into vapor.

*Father.* Did you observe any thing else in the experiments which I have just shown to you ?

*Harry.* Yes, father—I saw that the vapor of oil was solid when it was cold.

*Father.* Condensed.

*Harry.* Yes, condensed.

*Father.* And did you not observe that the vapor of water, when condensed, was fluid ?—And what did you observe, Lucy ?

*Lucy.* I thought, father, that the soot, or lampblack, which you told me was the vapor of oil, did not seem to turn into oil again, when it was condensed ; but that it had entirely a different appearance from the tallow and wax from which the oil came ; and yet,



that the vapor of water, when it was condensed, became water again.

*Father.* I do not think, my dear children, that my time has been thrown away in showing you this experiment. And, as I wish to make you like to attend to what is taught to you, I will endeavor to make it agreeable to you, by joining the feeling of pleasure to the feeling of attention in your mind, by giving you pleasure, or the hope of pleasure, when you attend.

*Harry.* I know what you mean, father ; for, if we had not attended to what we were about, you would have endeavored to give us pain.

*Father.* No, Harry, you are a little mistaken. I don't wish to give you pain, unless when I want to prevent you from doing something that would be hurtful to yourself, or to other people ; and then I wish to associate, that is, join pain with such actions. But I do not expect, that little boys and girls should be as wise as men and women ; and, if you do not attend, I only abstain from giving you pleasure.

*Harry.* But, father, what pleasure were you going to give us ?

*Father.* I was not going to give you any immediate or present pleasure, but only the hope of some pleasure to-morrow. Your mother and I intend, to-morrow, to walk to breakfast with her brother your uncle, who has come to live at a very pretty place not quite three miles from this house. He was

formerly a physician, and he has several curious instruments—a microscope, an electrifying machine, an air-pump, and a collection of fossils, and a few shells and prints ; and he knows very well how to explain things to other people. And the pleasure that your mother and I meant to give you, was to take you with us to-morrow morning.

Harry and Lucy were very happy when they were going to bed, from the remembrance of the day that they had passed, and from the hope of being happy on the day which was to come.

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At six o'clock in the morning Harry wakened ; and as they were to set out for Flower-hill at seven, he got up, and dressed himself with great alacrity, and Lucy did the same. But, alas ! their hopes were disappointed, for a violent thunder-storm came on before seven o'clock, which prevented their walk to their uncle's.

Harry planted himself at the window, and examined every cloud as it passed by, and every quarter of the sky, in expectation of fair weather and sunshine. But his sister, who was older, knew that her standing at the window would not alter the weather ; and she prudently sat down, to study botany before breakfast, and to examine some flowers, which she had been gathering in her walk the day before.

When Harry had stood some time at the window, and had seen no appearance of a change in the sky, he turned about, and looked wistfully round him, like a person who did not know what to do with himself. His mother, who, at that instant, came into the room, could not help smiling at the melancholy figure which she saw before her ; and she asked Harry what was the matter. Harry owned that he felt sorry and sad, because he had been disappointed of the pleasure which his father had promised him.

*Mother.* But, Harry, my dear, your father did not promise you fine weather.

*Harry (laughing).* No, mother, I know he did not, but I expected that it would be a fine day, and I am sorry that it is not.

*Mother.* Well, Harry, that is all very natural, as it is called, or to speak more properly, it is what happens commonly. But though you cannot alter the weather, you may alter your own feelings, by turning your own attention to something else.

*Harry.* To what else, mother ?

*Mother.* You have several different occupations, that you are fond of : and if you turn your thoughts to any of them, it will prevent you from feeling sad upon account of the disappointment that you have met with. Besides, my dear Harry, the rain must, in some respects, be agreeable to you, and it is certainly useful.

*Harry.* O yes, mother, I know what you

mean—my garden. It was indeed in great want of water, and it cost me a great deal of trouble, to carry water to it twice every day. My peas will come on now, and I shall have plenty of radishes—'Thank you, mother, for putting me in mind of my garden ; it has made me more contented.

Harry's father now came in, and seeing that he was cheerful, and that he bore his disappointment pretty well, he asked him, if he had ever seen a cork garden.

*Harry.* No, father ; I remember I have seen a cork model of a house, but I never saw the model of a garden made of cork.

*Father.* But this is not the model of a garden, but a sort of small garden made upon cork. Here it is.

*Harry.* Why, this is nothing but the plate, or saucer, that commonly stands under a flowerpot, with a piece of cork, like the bung of a barrel, floating in water.

*Father.* Notwithstanding its simplicity, it is capable, to a certain degree, of doing what a garden does. It can produce a salad. Here are the seeds of cresses and mustard ; sprinkle them thinly upon this cork, and lay it in the closet near the south window.

*Harry.* When may I look at it again ?

*Father.* Whenever you please. But do not touch, nor shake it, for, if you do, it will disturb the seeds from the places where they now rest, and that will prevent them from growing. In two or three days you will see,

that cresses and mustard plants have grown from these seeds.

*Harry.* Pray, father, will the seeds grow on the cork, as they grow in the ground ?

*Father.* No, my dear, it is not the cork that nourishes the plant, but it is the water which makes it grow. If you cover the bottom of a soup plate with a piece of flannel, and pour water into the place as high as just to touch the flannel, and scatter seeds on the surface of the flannel, they will grow upon it in the same manner that they grow upon cork.

*Harry.* But if it is by the water only, that the seeds are made to grow, would they not grow as well, if they were put upon the bottom of the plate, without any cork or flannel ?

*Father.* No, my little friend, they would not ; because, if there were only so much water in the plate as to cover only half of each of the seeds, it would be so shallow, as to be evaporated (you know what that means, Harry,) before the seeds could grow. Perhaps, also, the surface of the plate may be so smooth, as to prevent the fibres of the roots from taking hold of it. And there are many more reasons, which occur to me, why it is probable, that they would not grow.

*Harry.* But we can try, father.

*Father.* Yes, my dear, that is the only certain method of knowing.

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Lucy's mother recollected, that she had promised her the last year, to show her how

butter was made ; and, as the rain in the morning had prevented Lucy from going to her uncle's, her mother thought it would be a good time to take her into the dairy, where the dairy-maid was churning. Little Harry was permitted to go with his sister.

They remembered the wide shallow pans, which they had seen the year before ; and they recollected that their mother had told them that the cream, or oily part of the milk, which was the lightest, separated itself from the heaviest part ; or, to speak more properly, that the heaviest part of the milk descended towards the bottom of the pans, and left the cream, or lightest part, uppermost ; and that this cream was skimmed off twice every day, and laid by, till a sufficient quantity, that is to say, five or six or any larger number of quarts, was collected.

They now saw twelve quarts, or three gallons of cream, put into a common churn : and the dairy-maid put the cream in motion, by means of the churn-staff, which she moved up and down with a regular motion, for seven or eight minutes : when she appeared tired, another of the maids took the churn-staff from her, and worked in her stead ; and so on alternately for about three-quarters of an hour, when the butter began to come, as it is called, or to be collected in little lumps in the cream. Harry and Lucy were much surprised, when the lid or cover of the churn





was taken off, to see small lumps of butter floating in the milk.

They saw that the cream had changed its color and consistency, and that several small pieces of butter were swimming on its surface. These pieces of butter were collected, and joined together into one lump by the dairy-maid, who poured some cold water into the churn, to make the butter harder, and to make it separate more easily from the milk, which had become warm with the quick motion that had been used to make the butter

come. Then she carefully took it all out of the churn ; and put it into a wooden dish, and pressed it, so as to force all the milk out of it. She then washed it very clean, in cold water, a great many times, and, with a wooden thing, called a slice, which is like a large flat saucer, she cut the lump of butter, that she had made into pieces, in order to pull out of it all the cow's hairs that had fallen into the milk, of which the cream had been made.

Many of these hairs stuck to the slice, and others were picked out, which appeared as the butter was cut in pieces.

The butter was then well washed, and the water in which it had been washed was squeezed out of it. The butter was now put into a pair of scales, and it weighed nearly three pounds. Some of it was rolled into cylinders, of about half a pound weight each ; and some of it was made into little pats, and stamped with wooden stamps, which had different figures carved upon them ; the impression of which figures was marked upon the butter.

Lucy asked what became of the milk, or liquor, which was left in the churn ; her mother told her it was called buttermilk, and that it was usually given to the pigs.

*Lucy.* Mother—I have heard that in Ireland and in Scotland, the poor drink buttermilk, and are very fond of it.

*Mother.* Yes, my dear, but the buttermilk in Ireland is very different from the buttermilk here. We separate the thick part of the

cream from the rest, for the purpose of making butter ; but in Ireland they lay by the thinner part, which is only milk, as well as the thick cream, for churning, and they add to it the richest part of the new milk, which is what comes last from the cow when she is milked : and what is left, after the butter is made, is for this reason not so sour ; and is more nourishing than the buttermilk in this country.

*Lucy.* Do not they sometimes make whey of buttermilk and new milk ?

*Mother.* Yes, my dear, whey is made or buttermilk and skimmed milk ; but it is not thought so pleasant, nor useful in this country, though it is much liked in Ireland ; probably because the buttermilk here is not so good as it is in Ireland. I am told, that it is frequently preferred in that country to any other kind of whey, even by those who are rich enough to have wine-whey. You see, my dear Lucy, that small circumstances make great differences in things. I have heard it said, that the Irish poor must be very wretched indeed, if they be forced to use buttermilk, instead of milk ; but the fact is, their buttermilk is so much better than ours, that they frequently prefer it to new milk. To judge wisely, we must carefully make ourselves acquainted with the facts about which we are to judge.

*Harry.* Pray, mother, why does dashing about the milk with the churn-staff make butter ?

*Mother.* The process of making butter is

not yet exactly understood. Cream consists of oil, whey, and curd, and an acid peculiar to milk. You know what is meant by an acid.

*Lucy.* Not very well ; I know it means what is sour.

*Mother.* Yes, my dear, sourness is one of the properties of acids ; and when you have acquired a knowledge of a greater number of facts, that you can compare with one another, I shall be better able to explain to you what is meant by many terms, that I cannot at present make you understand.

*Harry.* But, mother, you have not yet told us why churning makes butter.

*Mother.* My dear, it does not make butter ; it only separates the oily or buttery part of the cream from the curd or cheesy part, and from the whey. We do not know exactly how this is done by churning ; but it is probable, that, by striking the cream with the churn-staff, or by shaking it violently, the oily parts, or particles, are, from time to time, forced nearer together, which enables them to attract each other.

*Harry.* Yes, mother. I know what that is —just as globules of quicksilver run together, when they are near enough.

*Mother.* Globules ! Harry, where did you find that new word ?

*Harry.* Father told it to me the other day, when I was looking at some quicksilver that he had let fall. He told me the little drops

of quicksilver, or mercury, which look like balls, were called globules, or little globes.

*Lucy.* And, mother, the drops of dew and rain stand on several leaves separate from one another. On a nasturtion leaf I have seen drops of water almost as round as drops of quicksilver ; and when I pushed two of the drops near one another, they ran together and formed one larger drop.

*Mother.* They were attracted together, as it is called.

*Lucy.* But the larger drop, which was made of the two drops, was not twice as large as either of the two small ones.

*Mother.* Are you sure of that, Lucy ?

*Lucy.* No, mother ; but I thought so.

*Mother.* Two drops of mercury of the same size, or two drops of any other fluid, when they join, do not form a drop that is twice as large in breadth, or diameter, as one of the small drops ; but such a drop contains exactly as much, and weighs as heavy, as the two small drops.

*Harry.* I do not understand you, mother.

*Mother.* I will, by degrees, endeavor to make you understand me ; but it cannot be done at once, and you have attended enough now.—Lucy, it is time to read—let us go on with the account of insects, which you were reading yesterday.

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Then Lucy and Harry, and their mother, left the dairy, and returned to the drawing-room.

*Mother.* Here, Harry, sit down, and listen to what your sister reads. You will soon be able to read to yourself without assistance; which, in time, will become an agreeable employment.

Lucy now read in the Guardian, No. 157, a very entertaining account of the industry and ingenuity of ants.

Both Harry and she wished much that they could find some ants' nests, that they might see how they carried on their works. Their mother said that she could show them an ant's nest in the garden: and, as it had done raining, she took them into the garden, and showed them two little holes in the ground, where the ants had formed cells, which served them for houses to live in, and for store-houses, to keep their eggs and food. They were busily employed in making a road, or causeway from one of these holes to the other. Great numbers were employed in carrying earth, to repair breaches which had been made in their work by the rain.

Harry laid some dead flies and some small crumbs of bread upon the track where the ants were at work; but they were not diverted from their labor by this temptation; on the contrary, they pushed the dead flies and the crumbs out of their way, and went steadily on with their business. Harry's mother told



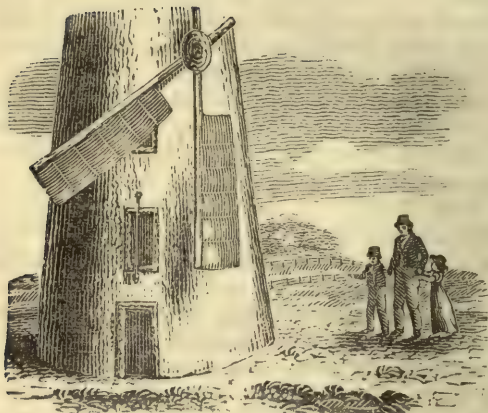
him she had tried the same experiment before, and that, perhaps, another time the ants might choose to eat, instead of pushing away the food, that was offered to them. Harry and Lucy staid, patiently watching the ants, till it was time to dress for dinner.

After dinner Harry's father told him, that the weather was sufficiently fine for their jaunt to Flower-hill ; and Harry now saw, that it was not such a great misfortune, as he had thought it in the morning, to have his walk deferred, and he and Lucy set out joyfully with their father and mother, to go to see their uncle.

Their way lay through some pretty fields, and over stiles, and through a wood, and along a shady lane. As they passed through the fields, Harry, when they came to a corn-field, was able to tell the name of the grain, which was growing in it, and Lucy told him the names of several of the wild flowers and weeds which were growing among the corn and under the hedges.

During the last year, Harry had learnt to be very active in body, as well as in mind ; and, when he came to a low stile, he put his hands upon the top rail, and vaulted nimbly over it. And Lucy ran almost as fast as her brother, and was very active in every exercise that was proper for a little girl.

They soon came to a windmill, which went round with great quickness. It was not necessary for his father to warn Harry, not to



go too near the arms or sails of the windmill, as he had read in a "*Present for a little Boy*" how dangerous it is, to go within the reach of a windmill's sails.

He was not however foolishly afraid, but wisely careful. He kept out of the reach of the sails, but he was not afraid of going to the door, or the wheel and lever, by which the top was turned round ; and he counted, with the assistance of his father, the number of turns which the sails made in a minute.

His father looked at his watch, during one minute ; and Harry counted the number of revolutions, or turns, that the sails made in that time. He found, that they went round forty-five times in a minute.

Lucy observed, that the middle of the sails moved round through a very small space, but that the ends, or tips of them, went very fast.

*Father.* My dear, you see a black spot in that part of the cloth of the sails, which is near the centre of the arms, goes as often round as the tips of the sails—What then do you mean, by saying, that the tips move very fast ?

*Lucy.* I mean, that they go a great way in a little time.

*Father.* What do you mean by a great way ?

*Lucy.* I am afraid, that I cannot explain myself clearly — I mean, that the tips of the windmill sails go through a great way in the air—I believe, I should say, that they describe a very large circle ; and the part of the sails, that are near the centre, describe a small circle.

*Father.* Now I understand you distinctly : the circle, which the tips describe, is very large, *when compared* with that described by the part near the centre. I have tried several times how fast the tips of windmill sails move ; and, when there was a brisk wind, they moved a mile in a minute.

*Harry.* That is very fast indeed !—But how could you tell this, father ?

*Father.* I cannot explain to you now ; but some time hence I will.

They now went through a wood where they saw squirrels jumping from tree to tree with great agility ; and rabbits, sitting up on their hind legs, looking about them, and running from one hole to another, as if they were at play. Harry asked several questions about the squirrels and rabbits, and about woodpeckers, and other birds that he saw. By these means, he and Lucy got some knowledge in their walk, and were amused the whole way to their uncle's.

*Harry.* Father, this walk puts me in mind of ' Eyes and no Eyes,' in Evenings at Home. I feel very glad to find, that things, which I have read in that book, are like real things, and that what I have read is of use to me.'

Neither Lucy nor Harry had ever seen their uncle B—; and they expected, as he was called Doctor, that he must be a very grave old man, who would not take the trouble to talk to little children : but they were much mistaken ; for they found, that he was very cheerful, and that he talked to them a great deal.

After tea he took them into his study, in which, beside a great many books, there were several instruments and machines of different sorts.

They had both seen a barometer and thermometer at home, but the barometer at Doctor B—'s was much larger, than what Harry had seen before; and it was not fixed up against

the wall, but was hung upon a stand with three legs, in such a manner, that, when it was touched, it swung about; and the shining quicksilver, withinside of it, rose and fell, so as to show that it did not stick to the tube, that contained it. There were an air-pump, and a microscope, and a wooden orrery, in the room, and a pair of very large globes.

Doctor B— let Harry examine them. And he was so good, as to answer all the questions that either Lucy or Harry asked him. Harry asked him, what that shining liquid was, which he saw in the tube of the barometer.

*Doctor B.* It is a metal called quicksilver; and it is found in mines under ground.

*Harry.* My father showed me quicksilver the other day, and it was liquid, and was spilt on the table, and on the floor; and how can that be a metal? I thought metals were all solid.

*Doctor B.* So they all are, when they are sufficiently cold.

*Harry.* Then is quicksilver hotter than iron?

*Doctor B.* I cannot explain to you, at present, what you want to know.

*Harry.* What is that globe made of?

*Doctor B.* Of pasteboard and plaster.

*Harry.* How is it made round? I thought pasteboard was made of flat sheets of paper, pasted upon one another.

*Doctor B.* Flat pasteboard is; but the pasteboard upon this globe is made round, by means of a round mould, upon which it is formed— You know, I suppose, what a mould is?

*Harry.* Yes, I do, pretty well. But how can the pasteboard, after it is all pasted together, be gotten off a round mould ?

*Doctor B.* After it is dry, it is cut all round with a knife ; and then it will come off the mould in two caps, as the shell of a nut, when it is opened with a knife, comes off the kernel.

*Harry.* What is the use of this machine, which you call an air-pump ?

*Doctor B.* To pump air out of that glass vessel, which you see.

*Harry.* I do not quite understand you, sir.

*Doctor B.* No, my dear, it is not probable, that you can ; but I will soon give you a little book, which will teach you the uses of several instruments of this sort.

*Harry.* My dear uncle, I cannot tell you, how much I shall be obliged to you.

Harry and Lucy were much delighted with what they saw at their uncle's ; and as they had not been troublesome, he asked their father and mother, to bring them to Flower-hill, when they next came to see him.

They returned home that evening, just before it was dark, and went to bed by moonlight.

Thus ends an account of three days passed by Harry and Lucy. One day when Harry was about five, and Lucy six years old. And two days, a year afterwards, when Lucy was seven, and Harry six years of age.



## HARRY AND LUCY.

## PART III.



## TO PARENTS.

WE are afraid, that the following pages should appear too difficult for children of eight or ten years old, if their thoughts have not been turned to subjects of the sort, which are here introduced to their attention. We, therefore, most earnestly deprecate the use of the following book, till the understandings of the pupils, into whose hands it may be put, shall have been previously accustomed to the terms, and to the objects, which are mentioned in the following parts of Harry and Lucy.

The intention of the writers is to prepare the mind for more difficult studies ; and the end, which they have in view, will be completely frustrated, if this little book is *crammed* into the minds of children. It is intended to be used in very short portions, and not to be formed into necessary tasks ; but to be read when the child's mind has been prepared, by what it has already seen and heard, to wish to hear and see more.

That these *lessons* (not *tasks*) are in themselves intelligible to children, we are certain ; because they have been readily comprehended by several young children, and in particular by a boy of four years and two months old. All the experiments herein related were shown to him, at different times, within a fortnight. He was

much entertained. His lessons were short, but his attention was engaged, and he seemed to wish for their return with eagerness. That he did, and does understand them thoroughly, and that he has not been taught certain answers to certain questions by rote, we assert. In making this assertion, we do not mean to claim any superiority for this child over other children ; because we believe him to be no prodigy, but a child of good abilities, without any peculiar cleverness. So far from making any such claim, we must acknowledge, that this boy scarcely knows his letters ; and, that he shows no extraordinary quickness in learning them. He is, however, lively and obedient ; indeed, the most lively children are, if well treated, usually the most obedient. The names of various objects, of common and of uncommon use, are familiar to him ; he has seen a variety of tools, and has been accustomed to handle a few of them. In short, in his education, nothing extraordinary has been said, or taught, or done. Every governess, and every mother, who acts as governess to her own children, may easily follow the same course. Where mothers have not time, and where they cannot obtain the assistance of a governess, it were to be wished, that early schools could be found for early education. To learn to read is to acquire a key to knowledge ; but alas ! it is a key, that is not always used to advantage. There is not an hour in the day, when something useful may not be taught, before books can be read, or understood. Perhaps parents may pity the father and mother, in Harry and Lucy, as much as they pity the children ; and may consider them as the most hard-worked, and hard-working people, that ever existed, or that were ever fabled to exist. They may say, that these children never had a moment's respite, and that the poor father and mother had never any thing to do, nor ever did any thing, but attend to these children, answer their questions, and provide for their instruction or amusement. This view of

what is expected from parents may alarm many, even of those, who have much zeal and ability in education. But we beseech them not to take this false alarm. Even if they were actually to do all, that the father and mother of Harry and Lucy are here represented to have done, they would not, in practice, feel it so very laborious, or find that it takes up so preposterous a portion of their lives, as they might apprehend. In fact, however, there is no necessity for parents doing all this in any given time, though there was a necessity for the authors bringing into a small compass, in a reasonable number of pages, a certain portion of knowledge.

Be it therefore hereby declared, and be it now and henceforward understood, by all those, whom it may concern, that fathers or mothers (*as the case may be*) are not expected to devote the whole of their days, or even two hours out of the four and twenty, to the tuition or instruction of their children. That no father is expected, like Harry's father, to devote an hour before breakfast to the trying of experiments for his children. That no mother is required to suspend her toilette—no father to delay shaving—while their children blow bubbles, or inquire into the construction of bellows, windmill, baromeier, or pump. And be it farther understood, that no mother is required, like Lucy's mother, to read or find every evening entertaining books, or passages from books, for her children.

Provided always, that said fathers and mothers do, at any and all convenient times, introduce or suggest, or cause to be introduced or suggested to their pupils, the simple elementary notions of science, contained in the following pages; and provided always that they do at all times associate, or cause to be associated, pleasure in the minds of their children with the acquisition of knowledge.

RICHARD LOVELL EDGEWORTH,  
AND MARIA EDGEWORTH.



## HARRY AND LUCY.

## PART III.



It was Lucy's business to waken her father every morning. She watched the clock, and, when it was the right time, she used to go softly into her father's room, and to open the curtain of his bed, and to call him.

'Father! father! it is time for you to get up!'

Then she drew back the window curtains and opened the shutters—and she put every thing ready for him to dress. She liked to do this for her father, and he liked, that she should do it for him; because the attending upon him taught her to be neat and orderly. She and her brother Harry both liked to be in the room with their father, when he was dressing; because then he had leisure to talk to them. Every morning he used to tell or teach them something that they did not know before.

One morning, at the beginning of winter, when the weather was cold, Lucy said—

'It is much colder in this room to-day, father, than it was when you got up yesterday.'

‘ O no ! I think it is not nearly so cold to-day as it was yesterday, when my father was dressing,’ said Harry.

‘ What do you think, father ?’

Their father went and looked at *something*, that hung in his window, and then answered—

‘ I think, that it is neither hotter nor colder in this room to-day than it was yesterday, at the time when I was dressing.’

‘ Are you sure, father ?’ said Lucy.

‘ Quite sure, my dear.’

‘ How can you be quite sure, father ?’ said Lucy—‘ How do you know ?’

‘ I can tell how father knows,’ cried Harry—‘ he looked at the thermometer.’

‘ But how does he know by looking at the thermometer ?’ said Lucy.

‘ Come here, and I will show you, for I know,’ cried Harry—‘ Stand up on this chair, beside me, and I will show you ; my uncle told me about it last summer, when I was looking at the thermometer at his house.

‘ Look, do you see this glass tube ?’

‘ Yes ; I have seen that very often.’

‘ I know *that* ; but do you see this part of the tube, at the top, seems to be empty ; and this part of it here, at the bottom, and half way up the glass tube, is full of something white—Do you know what that is ?’

‘ Yes ; I remember very well my uncle told me, that is quicksilver ; but what then ?’

‘ Stay, be patient, or I cannot explain it to you. Do you see these little marks, these



divisions marked upon the edge here, upon the ivory, by the side of the glass tube ?

‘ Yes : well ? ’

‘ And do you see these words printed ? ’

‘ Yes : *freezing, temperate, blood heat, boiling-water heat*—I have read those words very often, but I don’t know what they mean.’

‘ When it is neither very hot nor very cold, people say it is *temperate* ; and then the quicksilver will be just opposite to that division where *temperate* is written. When it freezes, the quicksilver would be down here at the *freezing point* ; and, if this thermometer were put into boiling water, the quicksilver would rise up, and it would be just at the place where *boiling-water* is written. *Blood heat*, I believe, means the heat that people’s blood is of generally—I am not sure about that. But look, here are the numbers of the degrees of heat or cold. Boiling-water heat is 212 degrees : and when it is freezing it is 32 degrees.’

‘ And the heat of this room now is—Look, what is it, Lucy ? ’

Lucy said it was above the long line marked 40.

‘ Count how many of the little divisions it is above 40,’ said Harry.

She counted, and said seven : and her father told her to add that number to 40, which made 47.

Then Lucy asked how her father had known

that it was as cold, and no colder in his room to-day, than it was yesterday morning.

‘ Because, yesterday morning, the quicksilver rose just to the same place, to 47 degrees, as it does to-day. It always rises or falls with the same degree of heat or cold, to the same place—to the same degree.’

‘ But look, look, it is moving ! The quicksilver is rising, higher and higher, in the glass !’ cried Lucy. ‘ Look ! now it is at fifty—fifty-two—fifty-five—’

‘ Yes : do you know the reason of that ?’ said Harry.

‘ No ; I do not know,’ said Lucy : ‘ for it is not in the least warmer now, in this room, I think, than it was when we first looked at the thermometer.’

‘ That is true ; but you have done something, Lucy, to the thermometer, that has made the quicksilver rise.’

‘ I !—What have I done ?—I have not even touched it !’

‘ But you have put your face close to it, and your warm breath has warmed the glass. Now look, when I put my hand, which I have just warmed at the fire, upon the bottom of the thermometer—upon this little round ball, or bulb, where the greatest part of the quicksilver is—look, how it rises in the tube ! and now I will carry the thermometer near the fire, and you will see how much more the quicksilver will rise.’

Lucy looked at it, and she saw, that the

quicksilver rose in the thermometer, when it was brought near to the fire.

As Harry was putting it still closer to the fire, his father called to him, and begged, that he would take care and not to break the thermometer.

‘O yes, father, I will take care. If you will give me leave, now, I will put it into this kettle of water, which is on the fire, and see whether the water is boiling or not. If it is boiling, the quicksilver will rise to *boiling water heat*, will it not?—I will hold the thermometer by the string at the top, so I shall not burn my fingers.’

His father stood by, while Harry tried this experiment; and Lucy saw, that, when the water boiled, the quicksilver rose to *boiling water heat*; that is, to 212 degrees.

Then Harry carried the thermometer back again to the window, and left it to cool for some minutes; and they saw, that the quicksilver fell to the place where it had been when they first looked at the thermometer this morning; that is to say, to 47 degrees.

‘Now you see,’ said Harry, ‘the use of the thermometer. It shows exactly how hot, or how cold it is.’

‘It measures the degrees of heat,’ said their father, ‘and the name *thermometer* means measurer of heat, from two Greek words; *thermo* means heat, *meter* means measure, as you may observe in the words *barometer*, *pyrometer*, *hygrometer*, and many others.’

‘ But why, father, does the quicksilver rise in the tube when it is hot, and fall when it is cold ? I do not understand why,’ said Lucy.

‘ That is a sensible question,’ said her father ; ‘ and I am not sure, that I can answer it so as to make you understand me. It has been found, from experience, my dear, that quicksilver *expands* ; that is, *spreads out*—*takes up more room*—when it is heated, than when it is cold : and it always expands equally when it is in the same heat. So that, by knowing how much more room it takes up, for instance, when it is held near the fire, than it did when it was hanging in the window, we could know how much greater the heat is near the fire, than at the window—Do you understand me, Lucy, my dear ?’

‘ Yes, father,—I think I do. You say, that, when the quicksilver is heated, it—I forget the word——’

‘ *Expands*,’ cried Harry.

‘ Yes, *expands*—When quicksilver is heated, it *expands*, father.’

‘ But what do you mean by *expands*, my little girl ?’

‘ It spreads out every way—its size increases—it takes up more room.’

‘ Very well—And what then ?’

‘ Why then—as it expands when it is heated, people can tell, by seeing or measuring the size of the quicksilver, how hot it is.’

‘ True—But how do you think they know exactly how much it increases in size or *bulk*,

when it is heated to different degrees of heat ? —How do they measure and see at once the measure of this ?'

'With a pair of compasses, father,' said Lucy.

'Look at this little ball, or globe of quicksilver,' said her father, pointing to a little ball of quicksilver in the glass, at the bottom of the thermometer. 'Would it not be difficult to measure this with a pair of compasses every time you apply heat to it ?'

'That would be difficult to be sure,' said Lucy.

'There must be some other way—Some way too that it can be measured, without taking the quicksilver out of the glass every time.'

'I know the way !' cried Harry.

'Don't speak—don't tell her—let your sister think, and find out for herself. And now I must shave ; and do not not either of you talk to me, till I have done.'

Whilst her father was shaving, Lucy looked at the thermometer, and considered about it ; and she observed, that the thin, tall line, or column of quicksilver, in the little glass tube, rose from the bulb, or globe of quicksilver, at the bottom of the thermometer — and, when she put her warm hand upon this bulb, the quicksilver rose in the tube.

'I know it now !' cried Lucy, 'but I must not tell it, till father has done shaving, lest I should make him cut himself.'



As soon as father had done shaving, Lucy, who had stood patiently at his elbow, stretched out her hand, and put the thermometer before his eyes.

‘Here, father! now I will show you.’

‘Not so near, my dear—do not put it so close to my eyes; for I cannot see it, when it is held very near to me,’ said her father.

‘There, father; you can see it now,’ said Lucy, ‘cannot you? and you see the quick-silver, in this little glass globe, at the bottom of the thermometer.’



‘ Yes ; I see it,’ said her father.

‘ When it is heated, and when it expands, continued Lucy, ‘ it must have more room, and it cannot get out at the bottom, or sides, or any way, but up this little glass tube. There is an opening, you see, from the uppermost part of that little globe, into this glass tube.’

‘ Very well,’ said her father — ‘ go on, my dear.’

‘ And, when the quicksilver is made hot, and hotter, it rises high, and higher, in this tube, because it wants more and more room ; and the height it rises to, show how hot it is, because that is just the measure of how much the quicksilver has expanded—has grown larger. And, by the words that are written here—and by these little lines—these degrees, I believe, you call them—you can know, and tell people exactly how much the quicksilver rises or falls—and *that* shows *how hot* it is.’

‘ Pretty well explained, Lucy—I think you understand it.’

‘ But one thing she does not know,’ said Harry, ‘ that, in making a thermometer, the air must be first driven out of the little tube, and the glass must be quite closed at both ends, so as to keep out the air. My uncle told me this—and now, father,’ continued Harry, ‘ will you tell me something about the barometer—I know, that it is not the same as the thermometer ; but I do not know the difference—Father, will you explain it to me ?’

‘ Not now—You have had quite enough for

this morning, and so have I. I must make haste and finish dressing, and go to breakfast.'

'Yes; for mother is ready, I am sure,' cried Lucy. 'Here are your boots, father.'

'And here is your coat,' said Harry.

'Father, to-morrow morning, will you let us blow bubbles, when you have done shaving?' said Lucy.

'No, no; I want to hear about the barometer to-morrow,' said Harry.

'We will settle this when to-morrow comes; and now let us go to breakfast,' said their father.

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At breakfast, as their father was looking at the newspaper, he found an advertisement, which he read aloud. It said, that a man had brought an elephant to a town in the neighborhood, which he would show to any person, who would pay a shilling a piece for seeing it; and, that the elephant was to be seen every day, for a week, between the hours of twelve and three.

Harry and Lucy wished very much to see an elephant; they said, that they would rather see it, than any other animal, because they had heard and read many curious anecdotes of elephants. Their father said, that he would take them, this morning, to the neighboring town, to see this elephant. Harry immediately went for his '*Sandford and Merton*,' and Lucy jumped from her chair, and ran for her '*Instinct Displayed*.' And they each found, in

these books, anecdotes, or stories of elephants, which they were eager to read to their father and mother. Lucy had not quite finished breakfast, so Harry began first ; and he read the history of the tailor, who pricked the elephant's trunk with his needle ; and he read of the manner in which the elephant punished him. And he read the account of the enraged elephant, who, when his driver's child was thrown in his path, stopped short, in the midst of his fury ; and, instead of trampling upon the infant, or hurting him, looked at him seemingly with compassion, grew calm, and suffered himself to be led, without opposition, to his stable.

When Harry had finished reading, Lucy said that she liked these stories of the elephant ; but that she had read that part of Sandford and Merton so often, that she had it almost by heart. ' But now,' said she, ' I will read you something, that will, I hope, be quite new, even to father and mother—unless they have read *my* Mrs. Wakefield's ' Instinct Displayed.'

Then Lucy read an account of Rayoba's favorite elephants, who were almost starved by their keepers, before it was discovered how their keepers cheated them of their food. When the prince saw that his elephants grew thin and weak, he appointed persons to see them fed every day ; and these people saw the keepers give the elephants the food, of which they were most fond, rich balls, called *massaulla*, composed of spices, sugar, butter, &c. The elephants took these balls up in their trunks and

put them into their mouths, in the presence of the persons, who were to see them fed; but still the elephants, though they seemed to eat so much every day, continued thin and weak.

‘ At length, the cheat was discovered, and it shows the extraordinary influence the keepers had obtained over these docile animals. They had taught them, in the inspectors’ presence, to receive the balls, and to put them into their mouths, with their trunk, but to abstain from eating them; and these tractable creatures actually had that command over themselves, that they received this food, of which they are so remarkably fond, and placed it in their mouths, but never chewed it; and the balls remained untouched, until the *inspectors* (that is, the people who had been appointed to see them fed) withdrew. The elephants then took them out carefully, with their trunks, and presented them to the keepers; accepting such a share only as they were pleased to allow them.’

Lucy rejoiced at finding, that this curious anecdote was new to her brother, and even to her father and mother. After they had talked about it for some time, and had admired the docility of these poor elephants, Lucy told what she had read of another elephant, who used to gather mangoes for his master, and to come every morning to his master’s tent, when he was at breakfast, and wait for a bit of sugar candy. Lucy’s mother then desired her to bring from the library table the book, which

she had been reading yesterday evening, *Mrs Graham's Account of her Residence in India*. When Lucy had brought the book, her mother showed her an account of an elephant, who had saved the life of an officer, who fell under the wheel of a carriage; and a description of the manner in which elephants are tamed; she told Lucy, that she and Harry, if they chose it, might read these passages. They liked particularly to read, at this time, accounts of this animal, that they might know as much as they could of his history, before their father should take them to see the elephant. They were happy, reading together what their mother had given them leave to read of this book; and then they looked over the prints, and, by the time they had done this, their mother called Lucy to her dressing room, to write and to cast up sums, and Harry went to his father's study, to learn his Latin lesson.

Harry and Lucy regularly employed themselves, for about an hour, every morning, after breakfast; and, in general, they attended entirely to what they were doing, while they were learning whatever they had to learn—therefore they learned well and quickly. Lucy was learning to write, and she wrote about two lines carefully every day; always trying to mend each day, faults of which her mother had told her the preceding day. She was also learning arithmetic; and she could, with the help of a dictionary, make out the meaning of half a page

of French, every day, without being much tired. She knew that nothing can be learned without taking some trouble; but when she succeeded in doing better and better, this made her feel pleased with herself, and paid her for the pains she took. She now read English so well, that it was a pleasure to her to read; and to her mother, it was a pleasure to hear her. So the reading English was always kept for the last of her morning employments. She was, at this time, reading such parts of *Evenings at Home*, as she could understand. This day, she read the 'Transmigrations of Indur;' and, after she had read this in 'Evenings at Home,' her mother let her read a little poem, on the same subject, which was written by a young gentleman, a relation of hers. Lucy particularly liked the following description of the *metamorphosis*, or *change*, of the bee into an elephant—

'Now the lithe trunk, that sipped the woodland rose,  
With strange increase, a huge proboscis grows :  
His downy legs, his feather-cinctured thighs,  
Swell to the elephant's enormous size.  
Before his tusks the bending forests yield ;  
Beneath his footstep shakes th' astonished field ;  
With eastern majesty he moves along ;  
Joins in unwieldy sport the monster throng.  
Roaming, regardless of the cultured soil,  
The wanton herd destroy a nation's toil.  
In swarms the peasants crowd, a clamorous band,  
Raise the fierce shout, and snatch the flaming brand ,  
Loud tramp the scared invaders o'er the plain,  
And reach the coverts of their woods again.'



By the time Lucy had finished reading, and that she had worked a little, and had copied the outline of a foot and of a hand, her mother told her to put by all her books, work, and drawings, and to get ready to go out ; for it was now the hour when her father had said, that he should take Lucy and her brother to see the elephant.

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Harry and Lucy walked with their father to the neighboring town, which was about a mile and a half distant from their home ; they went, by pleasant paths, across the fields. It was frosty weather, so the paths were hard ; and the children had fine running and jumping, and they made themselves warm all over. When she was very warm, Lucy said—

‘ Feel my hand, father ; I am sure, if I was to take the thermometer in my hand now, the quicksilver would rise finely. How high, father ?—to how many degrees do you think it would rise ?’

‘ I think,’ answered her father, ‘ to about seventy degrees of Fahrenheit’s thermometer.’

‘ Fahrenheit’s thermometer ! Why do you call it Fahrenheit’s thermometer ? I thought it was your thermometer, father !’ said Lucy.

‘ So it is, my dear ; that is, it belongs to me, but it is called Fahrenheit’s, because a person of that name first divided the scale of the thermometer in the manner in which you saw that of mine divided. There are other ther-

mometers, divided in a different manner; some of these are called Reaumur's thermometers, because they were first divided so by a person of the name of Reaumur.'

'But, father, will you tell me,' said Harry, 'something about the barometer?'

His father stopped him. 'I cannot tell you any thing about that now, my dear: run on, or we shall not have time to see the elephant; for the keeper of the elephant shows him only till three o'clock each day.' Harry and Lucy ran on, as fast as they could, and they were quite in time to see the elephant.

They were surprised at the first sight of this animal. Though they had read descriptions, and had seen prints of elephants, yet they had not formed an exact idea of the reality. Lucy said that the elephant appeared much larger; Harry said it was smaller, than what he had expected to see. Lucy said, that, till she saw it, she had no idea of the colour, nor of the wrinkled appearance of the elephant's skin. The keeper of this elephant ordered him to pick up a little bit of money which he held upon the palm of his hand. Immediately the obedient animal picked it up with the end of his proboscis, and gave it to his keeper. Lucy said, she had never had a clear notion how it moved its trunk, or proboscis, nor how it could pick up such small things with it till she saw it done. Harry said, that he had never had an idea of the size or shape of the elephant's feet, till he saw them. Lucy said, the prints

had given her no idea of the size of its ears, or of the breadth of its back. Both she and her brother agreed, that it is useful and agreeable to see real things and live animals, as well as to read or hear descriptions of them.

The keeper of this elephant was a little weak-looking man. Harry and Lucy admired the obedience and gentleness of this powerful animal, who did whatever his master desired, though sometimes it appeared to be inconvenient and painful to it to obey. For instance, when the elephant was ordered to lie down, he bent his fore knees and knelt on them ; though it seemed to be difficult and disagreeable to it to put itself into this posture, and to rise again from its knees. Lucy asked what this elephant lived upon, and how much he eat every day. The man said, that he fed the elephant with rice and with vegetables, and he showed a bucket, which, he said, held several quarts—this bucketful the elephant eat every day. There was, in one corner of the room, a heap of raw carrots, of which, the keeper said, the elephant was fond : he held a carrot to the animal, who took it gently, and eat it.

When Lucy saw how gently the elephant took the carrot, she wished to give it one with her own hand ; and the man told her that she might. But when Lucy saw the elephant's great trunk turning towards the carrot, which she held out to him, she was frightened ; she twitched back her hand, and pulled the carrot



away from the elephant, just as he was going to take it. This disappointment made him very angry ; and he showed his displeasure, by blowing air through his proboscis, with a sort of snorting noise, which frightened Lucy. Harry, who was more courageous, and who was proud to show his courage, took the carrot, marched up to the elephant, and gave it to him. The animal was pacified directly, and gently took the carrot with his proboscis, turned back the proboscis, and put the carrot into his mouth. Harry, turning to his father,

with a look of some self-satisfaction, said, that 'the great Roman general, Fabricius, was certainly a very brave man, not to have been terrified by the dreadful noise made by king Pyrrhus's elephant, especially as Fabricius had never seen an elephant before.' Lucy did not know what Harry *alluded to*, or what he meant; because she had not yet read the Roman history. He said, that he would show her the passage in the Roman history, as soon as they were at home. And now, having looked at the elephant, as long as they wished to look at him, and having asked all the questions they wanted to ask, they went away; they were glad to get out into the fresh air again, for the stable, in which the elephant lived, had a very disagreeable smell. Lucy pitied this animal for being kept *cooped* up, as she said, in such a small room, instead of being allowed to go about, and to enjoy his liberty. Harry then thought of horses, who live shut up a great part of their lives in stables. He asked his father, whether he thought, that horses, who have been tamed, or *broke in* as it is called, and who are kept in stables and taken care of by men, are happier or less happy than wild horses. His father said, he thought this must depend upon the manner, in which the horses are fed and treated: he observed, that if horses, who are tamed by man, are constantly well fed, and are protected from the inclemencies of the weather, and are only worked with moderation, it is probable that they are

happy ; because, in these circumstances, they are usually in good health and fat, and their skins look sleek, smooth, and shining. From these signs, we may guess that they are happy ; but, as they cannot speak, and tell us what they feel, we cannot be certain.

During the walk home, Harry and Lucy took notice of many things. There was scarcely an hour in their lives, in which they did not observe and learn something. One subject of observation and of conversation led to another ; but it is impossible to give an account of *all* these things.

When they got home, Lucy reminded her brother of his promise about Fabricius and the elephant : he showed her the passage in the Roman history, which he had read ; and that evening Lucy asked her mother, if she might read the whole of her brother's Roman history. Her mother gave her a little history of Rome,\* with sixty-four prints in it ; and she told Lucy, that, when she knew all the facts, told in this history, it would be time enough to read another, which might tell her more particulars of the Roman history.

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The next day being Sunday, Harry and Lucy went, with their father and mother, to church. The morning lesson, for this day, was one of the chapters of the Bible, which contains the history of Joseph and his brethren

\* Probably Mrs. Trimmer's.



Harry and Lucy listened attentively, and when they came home from church, they told their father, they wished very much, to know the end of that history, of which they had heard the beginning read by the clergyman, at church. Their father took down, from his bookcase, the large family Bible, and he read the whole of the history of Joseph and his brethren, with which the children were very much interested and touched.

In the evening, they each read to their mother one of Mrs. Barbauld's 'Hymns in Prose for Children.' Harry and Lucy loved these hymns, and they showed their mother the passages, that they liked, particularly in those, which they read this day.

'Mother, this is the passage, which I liked the best,' said Lucy——

'Look at the thorns, that are white with blossoms, and the flowers, that cover the fields and the plants, that are trodden in the green path: the hand of man hath not planted them; the sower hath not scattered the seeds from his hand, nor the gardener digged a place for them with his spade.

'Some grow on steep rocks, where no man can climb; in shaking bogs, and deep forests, and desert islands: they spring up every where, and cover the bosom of the whole earth.

'Who causeth them to grow every where, and giveth them colors and smells, and spreadeth out their thin transparent leaves?

'How doth the rose draw its crimson from

the dark brown earth, or the lily its shining white? How can a small seed contain a plant?

‘Lo! these are a part of his works, and a little portion of his wonders.

‘There is little need, that I should tell you of God, for every thing speaks of Him.’

Harry was silent for a moment, after he had heard these passages read again, and then he said—‘I like that very much indeed, Lucy: but now let me read to you, mother, what I like better still.’

‘Negro woman, who sittest pining in captivity, and weepest over thy sick child; though no one seeth thee, God seeth thee; though no one pitieth thee, God pitieth thee: raise thy voice, forlorn and abandoned one: call upon Him, from amidst thy bonds, for assuredly he will hear thee.

‘Monarch, that rulest over a hundred states, whose frown is terrible as death, and whose armies cover the land, boast not thyself, as though there were none above thee——God is above thee; his powerful arm is always over thee! and, if thou doest ill, assuredly He will punish thee.’

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The next morning, when Harry and Lucy went into their father’s room, Harry drew back the curtain of his father’s bed, and said—

‘Father, you promised to tell me something about the barometer, and it is time to get up.’

His father answered, without opening his eyes—

‘Do you see two tobacco pipes?’

Harry and Lucy laughed : for they thought that their father was dreaming of tobacco pipes, and talking of them in his sleep. Lucy recollected, that her mother said, he had been writing letters late the night before, and she said to her brother—

‘We had better let him sleep a little longer.’

‘Yes, do my dear,’ said her father, in a sleepy voice : ‘and take the two tobacco pipes, and my soap, and my basin, and the hot water, Lucy, that you brought for my shaving, and you may blow soap bubbles, in the next room, for half an hour : and, at the end of that time, come and waken me again.’

Harry looked about the room, and he found, on his father’s table, the two tobacco pipes, which he had been so good as to put there the night before. Taking care to move softly, and not to make any noise, that should disturb their father, they carried out of the room with them the hot water, basin, soap, and tobacco pipes. During the next half hour, they were so happy, blowing bubbles, watching them swell and mount in the air, and float, and burst, trying which could blow the largest bubbles, or the bubbles which would last the longest, that the half hour was gone before they thought that a quarter of an hour had passed. But Lucy heard the clock strike, and immediately she knew, that the half hour was over, and that it was time to go and waken her father again. So she went directly



for she was very punctual. Her father was now awake, and he got up; and, while he was getting up, she began to talk to him of the pretty soap bubbles, which they had been blowing; but Harry was impatient to ask his father something about the barometer.

‘Now, Lucy, let us have done with the soap bubbles,’ said Harry, ‘I want to learn something seriously—father, I want to understand the barometer perfectly, before I go, next week, to my uncle’s, that he may find I am

not so ignorant, as I was the last time he saw me : and besides, my cousin Frederic will be at home, and he is only a year or two older than I am : and my uncle says that Frederic understands the use of all the instruments in his room—but I did not understand even the barometer—father, will you explain it to me this morning ?’

‘ Just let me first show father this one large bubble,’ said Lucy, ‘ and then you may go to the barometer.’

Lucy blew a large bubble from the end of her tobacco pipe ; but it burst before it had risen far. Then Lucy put by the tobacco pipe and said—

‘ Now I will not interrupt you any more with my bubbles.’

‘ But perhaps, my dear Lucy,’ said her father, ‘ the bubbles may lead us to the knowledge of some things necessary to be known, before I can explain a barometer. Do you know what a bubble is ?’

‘ O yes, father,’ said she ; ‘ I remember you told me, a great while ago,—a bubble is——’

She was forced to pause, to think, however, before she could describe it.

‘ I believe, it is air, blown into a round case, or globe, of *something*—a soap bubble is air in a round case of soap and water—but, father, I have often seen bubbles on the top of water ; *they* are only air and water. But how can the case be made of water ? I can conceive,

that a globe of soap and water might stick together, because I know, that soap is sticky; but I wonder at water's sticking together, so as to make a hollow globe.'

'When you look at water,' said her father, 'or at quicksilver, you perceive that they are very different, not only in colour, but in their other properties.'

'*Properties*, father,' said Lucy—'that is a word of which you taught me the meaning—properties are what belong to things.'

'One of the properties of water is *fluidity*,' said her father—'sand, on the contrary, is not fluid. Sand may be poured out, like water or quicksilver; but the grains, of which it is composed, are separate, and have no visible attraction for each other. The parts of water *cohere*, or stick together, but slightly; a small force divides them; but still they have an obvious tenacity.'

'Father! what is *obvious tenacity*?—tenacity, I know, is stickiness—but what does *obvious* mean?'

'Easily seen—plain—easy to be perceived. By obvious tenacity I mean tenacity which you can easily perceive; though nothing viscid, or sticky, is added to the water, you see that water can be spread by air, so as to form the outer case of a bubble.'

'But when soap is added to water,' said Lucy, 'larger bubbles can be made.'

'Yes—Why?'

'Because the soap makes the parts of the



water stick together more strongly ; but, father,' continued Lucy, 'what is the reason that a bubble bursts ? for, if the outside case is strong enough to hold it at first, why should not *that* hold it as well always ? yet at last it bursts—what is the reason of this ?'

Her father said, that he believed there were several causes, which might make a bubble burst ; and that he was not sure, either that he knew all of them, or that he could explain them all, so as to make Lucy understand them. He mentioned some of the causes ; for instance, the wind blowing against the bubble might break it ; or the heat might expand the air withinside of it, and burst it ; or, at other times, some of the water, of which the outer skin of the bubble is made, may run down from the top to the bottom, till it makes the bottom so heavy, and the top so thin, that it bursts.'

Here Harry was heard to utter a deep sigh. His father smiled, and said—

'Poor Harry thinks we shall never get to the barometer : but have patience, my boy, we have not gone so far out of the way, as you think we have. Now, Harry, run to my work-shop, and bring me a bladder, which you will find hanging up near the door. And, Lucy, run for the little pair of bellows which is in your mother's dressing room.'

Harry brought the bladder, and Lucy brought the bellows. They were curious to see what their father was going to show them ; but, just then, the breakfast bell rang. Their

father could not show or tell them any thing more, that morning, for he was forced to finish dressing himself as fast as he could, and the children helped him eagerly. One reason, why they liked to come to their father every morning, and to be taught by him, was, that he never tired them by forcing them to attend for a long time together.

Ten minutes at a time he thought quite sufficient, at their age ; but then he required complete attention. Whenever he found, that they were not thinking of what he was teaching them, he would not say any more to them—he sent them away. For this they were always sorry : and this *punishment*, or rather this *privation*, was sufficient to make them attend better next day. It seldom happened, that they were sent out of their father's room. Though he never taught them *in play*, as it is called, yet he made what they learned as interesting to them as he could ; and he made work and play come one after the other, so as to refresh them. He and their mother took care, that Harry and Lucy should neither be made to dislike knowledge, by having tiresome, long tasks, nor rendered idle, and unable to command their attention, by having too much amusement.

Spoiled children are never happy. Between breakfast and dinner, they ask a hundred times, ' What o'clock is it ! ' and wish for the time when dinner will be ready, or when pudding or apple-pie will come. And, when din-

ner is over, they long for tea time, and so on. Or they *must* have somebody to amuse them, or some new toys. From morning till night they never know what to do with themselves; but, the whole long day they are lounging about, and troublesome to every body, continually wishing, or asking, or crying, for something, that they have not——Poor miserable creatures!——Children, who are not spoiled, will smile when they read this; and will be glad, that they are not like these, but that they are like Harry and Lucy.

Harry and Lucy loved pudding and apple-pie, as well as most people do; but eating was not their only, or their greatest pleasure. Having acquired a love for reading, and for knowledge of many sorts, they found continually a number of employments, and of objects, which entertained and interested them. So that they were never in want of new toys, or of somebody to amuse them. If any extraordinary amusement was given to them, such, for instance, as their seeing an elephant, they enjoyed it, as much as possible; but, in general, Harry and Lucy felt, that they wanted nothing beyond their common, every-day occupations. Beside their own occupations and amusements, there was something always going on in the house, which entertained them. They were now able to understand their father's and mother's conversation; living constantly with them (*and not with servants*) they *sympathized*, that is, *felt along*

*with* their parents, and made, to a certain degree, a part of their society. Frequently, their mother read aloud in the evenings—Harry and Lucy were never *desired* to listen; but sometimes they could understand what was read, and sometimes they found it entertaining.

It happened, one winter evening, that their mother began to read a French book, which they could not understand, yet it seemed to amuse their father so much, that they wished to know what it was about. All that they heard their father and mother saying to one another about it made them sure, that it must be entertaining; they left their map of Europe, which they had been putting together, and Lucy went and looked over her mother's shoulder at the book, and Harry leaned on his elbows opposite to his mother, listening eagerly, to try if he could make out any meaning; but he could understand only a word, or a short sentence, now and then.

Their mother observed their eagerness to know what she was reading, and she was so good as to translate for them, and to read to them in English, the passages, which she thought most entertaining. She told them, first, what it was about.

It was the account, given by a traveller, of a high mountain, in Switzerland, and of the manner of living of the people by whom it is inhabited. Harry and Lucy turned to the map of Europe, which they had been putting together, and pointed to Switzerland, as their mother

spoke. The name of the mountain, of which she was reading an account, was Mount *Pilate*. The name was taken, as their father told them, from the Latin word *Pileus*, a hat, the top of this mountain being almost always covered with what looks like a hat or cap of clouds. Different points, or heights, of this mountain, are called by different names. The most curious, difficult, and dangerous part of the ascent, lies between the point called the *Ass*, and another called *the Shaking Stone*.

‘O, mother! read about the shaking stone,’ cried Harry.

‘No, Harry, let mother begin here, where there is something about *des tres belles fraises*. I know the English of that, *very fine strawberries*.’

Her mother began to read just where Lucy’s finger pointed.

‘At the bottom of this road, up to the shaking stone, is a bank, which is covered with very fine strawberries, from the middle of summer till the 21st of December, if the snow does not cover them before that time. And they may be found, even under the snow, if people will take the trouble to look for them.

‘All the fir-trees, near this spot, are called *storm-shelterers*; because they seem to have been placed there on purpose to shelter people from the storms. Some of them afford a shelter of fifty feet in circumference. The rain cannot penetrate through the thick branches of these trees. The cattle are often seen gath-



ered together under them, even in the finest weather ; but it generally happens that a storm comes on, within a quarter of an hour after the cattle have taken shelter in this manner.'

'How do the cows, or horses, foresee the storm, mother ?' said Lucy.

'I do not know, my dear.'

'Let my mother go on reading, and ask all your questions afterwards, Lucy,' said Harry.

'If I can but remember them,' said Lucy.

'From the foot of the mountain, to the point where there is the village called Brundlen, the road is tolerably safe. The people can even drive their cows up here : but with this precaution : two men go with the cow, one at the head, and the other at the tail, and they hold in their hands a long pole, which they keep always between the cow and the precipice, so as to make a sort of banister, or rail, to prevent her from falling.

'People are forced to walk very slowly on this road. Half way up, you come to a curious fir tree. From its trunk, which is eight feet in circumference, spread nine branches, each about three feet in circumference, and six feet long. From the end of each of these branches, which are about fifteen feet from the ground, there rises perpendicularly, a fir tree. This tree looks, in shape, something like a great chandelier, with all its candles.

'The village of Brundlen is the highest and last village on the mountain. It stands at the foot of a rock, from which enormous stones



and fragments of rock frequently roll down : but the houses are so situated, *under the projecting part of the rock*, that all which falls from it, bounds over without touching them. The inhabitants of this village possess about forty cows. The peasants mow only those parts of the mountain, where the cattle cannot venture to go to feed. The mowers are let down, or drawn up, to these places, by ropes, from the top of the rock ; they put the grass, when they have mowed it, into nets, which are drawn up, or let down, by the same ropes, wherever it is wanted. It is remarkable, that the kinds of grass and herbs which are found in these mountainous places, are quite different from those which grow in the low countries.'

' My dear children, is it possible, that you are interested about these grasses ?' said their mother.

' No, mother,' said Lucy, ' not much about the grasses ; but I like that part about the mowers, let down by ropes ; and I like to hear it, just as you read it to father.'

' Round some of these stones, which have partly fallen, or mouldered away, grows a flower, which is a very dangerous poison. At four or five feet distance from this plant the cattle perceive its smell, and they leave the grass around it untouched. The flowers of the different kinds of this plant are of a fine deep blue, yellow, or white. The white are the most uncommon ; and the poison of these it is said, is the most dangerous. Some years

ago a young man gathered some of these flowers, and held them in his hand, while he descended the mountain, to go to a ball. When he was near the place where he was to dance, he felt, that his hand was numb, and he threw away the flowers. He danced, afterwards, for an hour or two, with a young woman, holding her hand all the time; he grew warm; and the poison, from the poisonous flowers, it is supposed, was communicated from his hand to hers; for they both died that night.'

Harry and Lucy were shocked at this story.

'But, mother,' said Harry, 'do you think it is true?'

'That was the very thing I was considering,' said his mother.

'Then his father and mother began to talk about the probability of its being true or false.

They looked back for the description of the flower and for the Latin name, which their mother, knowing that the children would not understand, had passed over. By comparing the name and description of this flower with those in botanical books, where the description and accounts of the properties of plants are given, they found that the plant, of which they had been reading, was a species of *aconite*, called in English, *wolf's-bane*, or *monk's-hood*, and, as several instances were mentioned of its poisonous and fatal effects, they were inclined to believe, that the story of the young man's and woman's death might be true.

Lucy, seeing, in some of the botanical books

in which her mother had been looking, pretty colored drawings, or prints of flowers, asked whether she might look at them. Her mother said, that she might, at some other time, but not this evening; because Lucy could not attend both to looking at these prints and to what she heard read aloud. So Lucy shut the books, and she and Harry put them into their places again, in the bookcase, resolving that they would look at them, together, *the next day*.

‘Now, mother,’ said Harry, as they drew their seats close to her, and settled themselves again to listen; ‘now for the shaking stone, mother.’

Their kind mother began immediately, and read on, as follows :—

‘This stone is at the summit of the mountain called the Ober Alp: it overhangs the rock a little, and appears as if it would fall: but this is really impossible, unless it were thrown down by a violent earthquake. The stone is as large as a moderate-sized house. When any one has the boldness to get upon it to lie down, and let their head overhang the stone, they will feel the stone shake, so that it seems as if it were going to fall that moment. In 1744, the stone ceased to shake. About six years afterwards, somebody discovered, that this arose from a little pebble which had fallen through a crack, and had remained under the stone. A man fastened a great hammer to a pole, and, after frequently striking the pebble with the hammer, he succeeded in dislodging

it. Immediately, the stone began to shake again, and has continued ever since to vibrate.'

'How glad the man, who struck the pebble from under the stone, must have been, when he saw it begin to shake again !' said Harry. 'I should like to have been that man.'

'Now I,' said Lucy, 'could not have managed the great pole and hammer ; and I would rather have been the person, who first discovered, that the pebble had got under the stone, and that it was the cause, which prevented the stone from shaking.'

'O, but any body, who had eyes, could have seen that,' said Harry.

'And yet all those people, who lived in that country, had eyes, I suppose,' said Lucy ; 'but they were six years before they saw it.'

'They had *eyes and no eyes*,' said her mother, smiling.

'That is true ; I understand what you mean, mother,' said Lucy. 'I have read '*Eyes and no Eyes*,' in *Evenings at Home* ; and I like it very much. But will you go on, mother, if there is any thing more that is entertaining?'

'There is something more, that, perhaps, would entertain you,' said her mother ; 'but I will not read any more to you to-night, because it is time for you to go to bed.'

'To-morrow night, mother, will you read some more to us ?'

'I will not promise, my dear—perhaps, I may have something else to do—or, perhaps, you may not deserve it so well to-morrow.

When to-morrow night comes, it will be time enough to give you an answer.'

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The next morning, when Harry and Lucy went into their father's room, they took care to have the bladder and the bellows ready by the time that he was up, as he had promised to show them some experiments.

'Now,' said he, 'we will fill this bladder with air, by blowing air into it with the bellows.'

He put the end of the bellows into the neck of the bladder, and bid Harry hold the bladder, and Lucy blow the bellows.

'It is now quite full, father,' said Lucy : 'I will tie the air in, with a waxed string round the neck of the bladder. I know how to do that—Look, how full, and round and tight it is.'

'So it is,' said her father ; 'but now I want to let out some of the air, that is in this bladder, without letting out all of it : how shall I do that ?'

'I do not know,' said Lucy ; 'for, if I untie this string, I am afraid all the air, that is in the bladder now, would come out.'

'That it certainly would,' said her father.

'How shall we manage it ?' repeated Harry and Lucy : after considering for some time, Harry observed, that, beyond the place where the bladder was tied, there was enough of the neck of the bladder left to admit the nose of the bellows : he proposed, that they should put in the end of the bellows, and tie the blad-



der round it, and then untie that string with which they had at first tied the neck of the bladder. His father said, that this would do, but he could show him what would do better. He gave him a little piece of wood, about two inches long, that had a wooden stopper at one end, that could be easily put into the pipe, and easily taken out. He told Harry, that this kind of pipe and stopper are called a *spigot* and *faucet* : he fastened the faucet into the neck of the bladder, so that he could stop the air from coming out of the bladder when it was



full, and he could at any time let out the air, by taking away the peg, or spigot. Then he let out a great part of the air that was in the bladder, till it was nearly empty, stopped the faucet again with the spigot, and then carried the bladder to the fire.

‘Now you will see,’ said their father, ‘that the heat of the fire will swell the small quantity of air remaining in the bladder, till it will fill as great a space, as that which was filled by all the air, which we forced into it at first with the bellows. Here, Harry, take this to the fire, while I shave myself.’

The children held the bladder near the fire, but it did not swell out immediately; and, after they had held it a few minutes, they began to think, that it would *never* do, as Harry said. His father told him, that he must not be so impatient, if he intended to try experiments.

‘If you are tired of holding the bladder,’ said he, ‘put it down on the hearth, leave it there, and go and do, or think of something else; and, in about a quarter of an hour, perhaps, it will begin to swell out.’

‘A quarter of an hour! that is a great while indeed!’ said Harry.

However, the quarter of an hour passed, while the children were putting some little drawers of their father in order. When they returned, to look at the bladder, they saw that it was beginning to swell, and they watched it, while it gradually swelled. First one fold of

the bag opened, then another, till, at last, it was again swelled out into the shape of a globe.

‘This is very extraordinary!’ said Lucy, ‘that the little, the very little air, which father left in the bladder, should have swelled out to this size, without any thing being added to it.’

‘Without any thing being added to it!’ repeated her father: ‘think again, my dear.’

‘I have *thought again*, father; but, I assure you, nothing was added to the air; for we never opened the bladder, after you put in the—what do you call it!—which fastens it.’

‘The spigot,’ said Harry.

‘The spigot,’ said Lucy. ‘Well, father, I say, nothing was added to the air.’

‘I say, daughter, you are mistaken.’

‘Why, father, we did nothing in the world but hold the bladder to the fire, and leave it before the fire, and nobody touched it, nor put any thing to it, nor near it!’

Still her father said—‘Think again, Lucy.’

She recollected herself, and exclaimed—

‘I know what you mean now, father—heat—*heat* was added to it!’

‘Yes,’ said her father, ‘heat mixed with the air of the bladder; and, by separating the parts of the air from each other, made them take up more room. Now take the bladder into a cold place; hang it up near the window, and let us see what will happen.’

‘I know what will happen, father,’ said Lucy. ‘When the air in the bladder grows cold, it will take up less room.’

‘It will contract,’ interrupted Harry.

‘And then,’ continued Lucy, ‘the bladder will shrink, and become less and less, and it will fall in folds, in a kind of loose bag, just as it was before we carried it to the fire. I shall like to see whether this will happen just as I think it will.’

Lucy hung up the bladder in a cold place, and watched it for a few minutes; but she did not perceive any immediate alteration.

‘It will be as long in shrinking as it was in swelling out,’ said she; ‘and breakfast will be ready, I am afraid, before it shrinks.’

‘I know a way of making it shrink quickly,’ cried Harry.

‘What is it?’

‘I will not tell you, but I will show you,’ said Harry. ‘You shall see what—you shall see.’

He ran out of the room, and soon returned with his little watering-pot full of cold water.

‘Now, Lucy,’ said he, ‘hold the basin for me under the bladder, that we may not wet the floor—hold it steady.’

He poured cold water from the nose of the watering-pot, so as to sprinkle the water all over the bladder, and immediately the bladder began to collapse, or shrink; and soon, to Lucy’s delight, it was diminished to the size of which it had been before it was carried to the fire, and it hung like a loose or flaccid bag.

‘Father, look!’ said she, ‘look how much less room the bladder takes up now!’

‘Then,’ said her father, ‘something must have been taken away from what was withinside of it.’

‘Yes,’ said Lucy.

‘What was taken away?’

‘Heat,’ replied Lucy.

‘What took away the heat?’

‘Cold water.’

‘How did that happen?’

Lucy answered, she believed that the heat went into the water—that the water must have taken away the heat of the air that was within the bladder.

‘Attracted!’ cried Harry: ‘you should say, that the water attracted the heat from the air.’

‘Well, attracted,’ said Lucy:—‘first, I suppose, the bladder itself became warm, by touching the warm air withinside of it: then the water took, or attracted—as you tell me I must say—some of the heat from the bladder: then the bladder attracted some more heat from the inside air: and so on.’

‘Accurately stated, Lucy,’ said her father; ‘Now you have thought enough of all these things——Stay!—before you go, tell me what you have learned from the experiments you have tried this morning.’

‘Experiments, father!’ said Lucy, smiling, and looking surprised—‘I did not think we had been trying experiments!—I thought, that only grown up people, and philosophers, could try experiments.’

‘There you were mistaken, my dear,’ said

ner father ; ‘ an experiment is only a trial of any thing, or something done to find out what will be the consequence. You carried the bladder to the fire, or poured cold water upon it, to find out what would happen to the air withinside of it. Children can try some experiments, as well as grown up people can.’

‘ Father,’ cried Harry, ‘ I have heard you talk of Dr. Franklin——’

‘ And of Newton,’ said Lucy, ‘ I heard something——’

‘ Very likely, my dear,’ interrupted her father ; ‘ but do not fly off to Dr. Franklin and Newton, till you have answered the question I asked you just now. What have you learned from the experiments you tried this morning ?’

After Lucy had recollected what she had seen and heard, she answered ;—‘ I have learnt, that heat expanded, or spread out, the air in this bladder ; and that cold——’

‘ That is, the want of heat,’ interrupted her father.

‘ That cold, or the want of heat, made or let the air in the bladder grow smaller.’

‘ Contract,’ said Harry.

‘ The same effects would be produced by taking away heat, not only from the air in that bladder, but from all air,’ said their father. ‘ Now put the bladder in the place where you found it, and let us divert ourselves with something else. Can you cut capers, Harry ?’

‘ Yes, father ; but first I want to say something :—How very little we learn every morn-

ing! I looked at your watch, when I came into your room, and it was just half after eight o'clock, and now it is nine. So we have been here half an hour——Half an hour!—I can scarcely believe that we have been here so long, father?’

‘Then you have not been tired, Harry?’

‘No, not at all:—But I am afraid, father, that, if we learn so very little every day, we shall never get on.’

‘You need not be afraid of that, my dear: learning a little, a very little, accurately, every day, is better than learning a great deal inaccurately.’

‘A little and a little, every day regularly, make a great deal in many days,’ said Lucy. ‘I have found this to be true, when I have been at work, and when I have done but very little each day.’

‘But when shall we get to the barometer?’ said Harry.

‘O! is that what you mean?’ said his father. ‘Patience, my boy!—Patience till to-morrow!’

‘Patience till to-morrow I must have, for I cannot help it,’ said Harry, sighing—‘I wish to-day was over.’

‘No,’ said Lucy, ‘you need not wish to-day was over. Recollect, brother, that we have a great many pleasant things to do to-day. I am sure, Harry, you cannot wish, that this evening was over, because you know—though mother did not promise it—if we deserve it—as I am sure we shall—she will





read to us some more of that man's entertaining travels.'

During this day, Harry and Lucy were attentive to every thing, that they had to do. It snowed, so that, after they had finished their lessons, they could not go out, or take as much exercise as usual ; but they warmed themselves by playing at hide and seek, and at battledore and shuttlecock, and at ball, at which they were allowed to play, in an empty gallery, where they could do no mischief.

The evening came, and they were eager to know whether their mother would read to them this night. She smiled, when Lucy brought the book to her, and said—

‘Yes, my dears, you have both been attentive to every thing you had to do to-day, and I shall be glad to give you this pleasure ; but, first, I must write a letter.’

‘While you are writing, mother,’ said Lucy, ‘may we try if we can make out any of this French ? here is something, that you missed, about *la statue et la caverne*—the statue and the cavern—which looks as if it was entertaining : and I wish I could make it out—May I try, mother ?’

‘Yes, my dear, provided you do not turn me into a dictionary ; because I cannot write my letter, and be your dictionary at the same time.’

Without their mother’s assistance, Harry and Lucy made out, pretty well, the sense of what they wanted to read ; and, as soon as their mother had finished her letter, Lucy began to tell her all, that they had translated.

‘We have found out, mother, that it is an account of a man of the name of Huber, who wanted to go into a cavern, in a rock of black, or blackish stone (*noirâtre*,) to see a statue called *Dominique*, which was of white stone, and seemed to be about thirty feet high—above twice as high as this room, mother ! But no one had ever been able to get to this statue, the way to it was so dangerous ; they could, however, distinguish plainly, that it was the

figure of a man — doing something on a table—

‘*Accoudé sur une table.*’

‘Mother, you must, if you please, be so good, as to tell us what *accoudé* is ; for we could not find it in the dictionary.’

‘It is just what Harry is doing at this moment—leaning his elbows on the table.’

‘O, now I understand it perfectly. The figure of a man leaning with his elbows on the table, his legs crossed, and seeming to guard the entrance of this cavern. Well, ma’am, nobody had ever been able to get to his statue—I told you that.’

‘True, my dear ; therefore you need not tell it to me again.’

‘Very well, ma’am—but this man, of the name of Huber, who was a very courageous person, was determined to get to the statue. So, finding that he could not clamber up from the bottom of this rock, he had himself let down from the top, by a long, a very long rope, which he tied, I suppose, round his body ; but it does not say so. When he was let down—What do you think he found ?—He found—How provoking !—that the rock overhung the cavern so much, that, as he hung down this way, *like a plumb line*, as Harry says, he never could reach the entrance of the cavern, which was far in, far under the rock ; so he was forced to call to the people to draw him up again. But he had seen enough to be almost sure, the statue was really a statue of

a man, and not a white stone that looked like a man, as some people thought it was——So——then there is something about the statue's not being '*l'ouvrage fortuit de la nature*'——*that* we could not understand, so we missed it. So the man, Huber, got a pole, to the end of which he fastened a hook, which he thought he could hook into the rock, and pull himself closer and closer to the entrance of the cavern, and so get in——So——'

'But, my dear, leave out *so*—do not *sew* your story together *so*.'

'So, ma'am——I mean—he was let down a second time—but, O! now, ma'am, the terrible thing!—the rope twisted and twisted continually; his weight was more than the rope could bear, and it broke, and he fell, and was dashed to pieces!'

'Poor man! Was not he very courageous, father?' said Harry; 'I admire him very much.'

'He was courageous, certainly,' said Harry's father; 'but, before we admire him very much, we should consider what his motive was, or what good he could do by hazarding his life. If it was with the hope of being of any great service to himself, or to any one else; if it was to accomplish any useful or generous purpose, I should admire a man for risking his life; but I cannot admire him for running the chance of breaking his neck, merely to see a statue; or to find out whether it was the statue of a man or a white

stone. I remember, that, when I was at Clifton, some years ago, a boy was dashed to pieces by falling from a high rock, to which he had climbed, to look for a bird's nest. A few days after this accident happened, I saw another boy climb to the same place, in search of the same nest—'This was folly, not courage.'

'It was, indeed,' said Harry. 'But, mother, will you be so kind, to read on?'

'Next comes,' said their mother, 'an account of the traveller's finding, in the wildest part of the mountain, a hut, inhabited by ten or twelve children, who lived there with a dog, who looked more savage than themselves. They took care of a flock of goats, and lived chiefly on the milk of the goats. As soon as a stranger appeared on this part of the mountain, the children ran away, and shut themselves up in their hut, and sent their dog after him—a dog he might be called, because he barked, but he was a peculiar and hideous looking creature——'

'Is this all, mother,' said Lucy, as her mother stopped, 'all that the man tells about the children?—I wish he had told more—I want to know how these children lived together, and whether they quarrelled, like those\* in '*The Children's Friend*,' who asked their father to let them live by themselves, and govern themselves for one day—Only for one day!—and what difficulties they got into!'

\* Les enfans qui veulent se gouverner.

‘Yes,’ said Harry, ‘but those children made themselves sick, by eating and drinking too much, and they quarrelled because they had nothing to do, but to play all day long : but there was no danger, that these poor children on the mountain should eat too much, for they had scarcely any thing but goats’ milk ; and they must have had enough to do, as there was no one to do any thing for them—But, father,’ continued Harry, after thinking for a minute, ‘I want to know who was king among them, and I want to know what laws they made for themselves, and what punishments they had ; for they could not have gone on long without some laws, I am sure.’

‘Pray, what would have been your laws, Harry ?’ said his father—‘I give you a week to consider of it—you and Lucy may consult together—Now let us go on with ‘*The Traveller’s Wonders.*’

‘I do not find any thing else worth reading to you, my dears,’ said their mother, ‘except an account of the manner in which these mountaineers are taught to walk in dangerous places ; and an account of the honesty of the people, in preserving, for the hunters, the game, which belongs to them.’

‘Ha ! I shall like to hear that ; we must remember *honesty*, the first thing in our laws,’ said Harry.

‘There are six hunters, who divide among themselves, and among the inhabitants of the mountain, all the game which they kill .



and, in return, they are fed for nothing in the cottages. 'They undergo great labor, and go into dangerous places, in pursuit of the goats and cocks of the wood. When these animals are shot, they often roll down from the highest rocks, to the vallies beneath ; and the peasants, who live in these vallies, when they find these dead birds and beasts, take care of them, and faithfully return them to the hunters. If this was not done, the hunters would be obliged to walk many miles, to pick up the game, which they kill. You see, that this honesty is useful to *all* the people who practise it—so is honesty in all cases : therefore, Harry, I think you will do right to remember it first in your laws.'

'So I will,' said Harry. 'But now, mother, will you go on to the part, which tells how the people learn to walk in dangerous places ?'

'I am afraid it is too late to read any more to-night,' answered his mother—looking at her watch. 'Good-night, my dear children—We must put off the account of the walking, till another time.'

## HARRY AND LUCY.

## PART IV.



‘Now for the barometer!’ said Harry, as he went into his father’s room in the morning.

‘Not yet, my dear boy,’ said his father; ‘you must know something more, before you can understand the barometer.’

Harry looked disappointed for a moment; but, recovering himself, he turned to observe what his father was doing. He was filling the bladder with water, to measure how much it would hold: it held five quarts, that is, ten pints. ‘If you fill it ever so often, you cannot force more water into that bladder, can you?’ said his father.

‘No, certainly not; for, if we try to put in any more water, it will run over,’ said Lucy.

‘Then you find,’ said her father, ‘that we cannot force the parts of water nearer to each other, as you did those of air—water differs from air, in this respect.’

‘Yes,’ said Lucy, ‘for, when you poured water upon the bladder, the air withinside took up less room than before; therefore, the parts of the air must have come nearer together.’

‘ But perhaps, father,’ said Harry, ‘ if this bladder was strong enough to bear our pressing water into it, we *could* force more in : if you were to take an iron vessel, and try to force water into it, would it not be possible to squeeze the parts of the water closer together, by pressing down the top of the vessel ?’

‘ No, my dear,’ continued his father ; ‘ if a vessel had a top, made to screw into its mouth, to fit it exactly ; and if water was poured into the vessel, till it came to the very mouth of it, you could not squeeze the water down by screwing the top on. If you force the cover to screw on, the water will make its way through the screw, till the cover is screwed quite down, or it will burst the vessel.’

‘ Burst the vessel !’ cried Lucy—‘ an *iron* vessel, father !—Is that possible ?—I should like to see that experiment——But I believe it would be dangerous, because when the iron vessel bursts, the bits of it might be thrown against us, and hurt us—Father, I remember your giving mother an account of some vessel, that burst, from having too much hot water—too much steam, I mean, in it.’

‘ Yes, because heat was added to the water,’ said Harry. ‘ Water, in the tea-kettle, *boils over*, when it is made very hot ; and I suppose, that, if the top of the tea-kettle was screwed down so tight, that no steam could get out, and if the spout was stopped in such a manner that the steam could not come out there, the tea-kettle would burst.’

‘Yes,’ answered his father.

‘Then there is a way of swelling water by heat?’ said Lucy.

‘It is not the water that swells,’ said her father: ‘while it continues water, it does not swell; but, when heat mixes with it, or when it becomes what we call steam, or vapor, then it swells, and takes up a great deal more room than it did before.’

‘But there was something I was in a great hurry to say,’ cried Lucy, ‘and now I have forgotten it—Talking of the *boiling over of the tea-kettle* put it out of my head.’

‘You mean the boiling over of the water in the tea-kettle,’ said her father.

‘Yes, father; but what was I thinking of?’ said Lucy.

‘Recollect,’ said her father, ‘what you were thinking of, just before we spoke of the tea-kettle; and then, perhaps, you may recollect what you want to remember.’

‘We were talking of the swelling, or not swelling of water, by heat—O, I recollect what it was!’ said Lucy—‘I know a way, father, of swelling, or expanding water without heat.’

‘What is that way?’ said Harry.

‘There is a way, I assure you, brother; and you know it, or, at least, you have seen it, as well as I—Don’t you know, that, when water is frozen, it swells?’

‘How do you know that, sister?’

‘I know, that bottles, filled with water, often burst, when it freezes,’ said Lucy: ‘I

assure you, I have seen the water bottle in my room broken by the frost.'

'That bottle had a very narrow neck,' said Harry; 'bottles, or jugs, that are as wide at the mouth, or wider than elsewhere, do not burst, when the water withinside of them is frozen—the jug in my room never bursts, though the water is often frozen in it.'

'What is the reason of that, do you think?' said her father.

'Because there is room for the ice to expand,' said Lucy.

'But does the ice expand, father?' said Harry.

His father answered—'At the moment of freezing, the parts of ice are found to be farther from one another, than the parts of the water were.'

'Does cold get between the parts of the water?' said Lucy.

'No, no,' said Harry—'cold is not a *thing*; father told us, that it is only a word, that expresses want of heat.'

'Call it what you will,' said Lucy, 'but still I do not understand.—What is it, father, that gets between the parts of the ice, and makes it take up more room at the moment it freezes?'

'I do not know, my dear,' said her father.

'You don't know, father!—I thought you knew every thing.'

'No, my dear,' said her father—'There are a great many things of which I know as little as you do—It is difficult to know

any thing well. Upon this very subject, of which you were speaking, there are different opinions, and I do not like to tell you any thing, of which I am not sure.'

'But, father,' continued Lucy, 'one thing you can tell me, or I can tell you, that ice is the same thing as water, and water is the same thing as ice, is not it so? except that one is fluid and the other solid.'

'Not quite the same—water is ice, with heat added to it, and a little air.'

'Then I should have thought,' said Lucy, 'that water ought to take up more room than ice.'

'Why, my dear?'

'Because water is ice and something more—something added to it. We saw, when we heated the bladder, that hot air took up more room than cold air, because it was air, and something added to it; for the same reason, I should have thought, that, if you add heat to ice, and so turn it into water again, that the water should take up more room than the ice; because, *I say*,' cried Lucy, struggling to explain herself, 'the water is ice, and something more—heat is added to it, you know.'

'I understand you, my dear,' said her father, 'and what you say is very reasonable. I should have thought as you do, if I had not seen the experiment tried; but we find, from experience, that this is not the case. However, try the experiment for yourself.'

'So I will, father,' cried Lucy. 'So we will,



and this very night too, if it freezes : and I hope it will freeze ; for, though I don't like the cold, I shall like very much to try this experiment ; and I have a little bottle, and I will fill it with water, put it out of my window, and in the morning I dare say we shall find it burst.'

'So it will,' said Harry, 'if the neck is narrow.'

'But,' said his father, 'I can give you a bottle with a very wide neck : if you fill this with water, up to the neck, either the bottle will break, or the ice will not only fill the bottle, but will shoot up through the neck of the bottle, like a stopper.'

'But what you wanted to try, I thought, was, whether water takes up less room than ice,' said Harry ; 'so, to make the proof quite exact, you should take the very ice, that has been frozen in the bottle, and melt it, that is, put heat to it : and then, when it is water again, try whether it takes up more or less room, or the same, that it did before.'

'Remember, you must melt it with a gentle heat, else the heat might evaporate some of the water,' said their father.

'We will take care, father,' and we will try all this,' said Lucy. 'I love trying experiments, especially when we do it together, and when you, father, are interested about them, as we go on.'

'Yes, and I love to have something to do and something to think of,' said Harry.

'And something to feel eager to go to again



the next day,' said Lucy. 'I like to feel curious to know how the thing will turn out.'

'Well, now turn out of my way, my dear,' said her father, 'for you are so close to my elbow, that I cannot whet my razor.'

It happened this day, that Lucy found, in one of her drawers, a number of horse-chestnuts, which she had collected in the autumn, and which she had intended to plant; but, having forgotten them, they had lain in this drawer for nearly six weeks, and they had become a little mouldy. Lucy, finding that

they were spoilt, threw them into the fire. A few minutes after she had thrown them into the fire, she was startled by hearing a noise, as loud as the noise made by a pop-gun ; and she saw bits of coal, and fire, and chestnut, thrown out on the carpet, to the distance of a yard from the hearth. While she was stooping to pick up these bits, another *pop* was heard, another chestnut burst, and more bits of coal, on fire, were thrown out, and one of them hit her arm and burnt her a little. Nobody was with her—She ran into the next room directly, knowing that her father was there, and she called him, and told him what had happened, and asked him what she should do. He went immediately, and took all the chestnuts out of the fire. Harry and his mother came while he was doing this ; they were glad that Lucy was not much hurt, and that no mischief had been done. Her father then explained to her the cause of what had happened ; he told her, that the heat of the fire, mixing with the water in the wet, or mouldy chestnuts, had turned the water into steam, which takes up more room than water ; and that the steam, being confined by the outside skin of the chestnuts, had, to make room for itself, burst through that skin, and had caused this sudden explosion.

After having explained this to Lucy, her father gave her an account of an accident, which had happened to him, when he was a child. He told her, that he had thought that he could

make a large lead pencil, such as he had seen used for ruling children's copy books; accordingly, he put some lead into a fire-shovel, and bid his sister hold it over the fire to melt. In the mean time, he fixed upright a bit of elder tree, out of which part of the pith had been scooped. The wood was not quite dry. When the lead was melted, he took the shovel from his sister, and poured it into the hole, in the piece of elder, from which the pith had been scooped: but, to his great surprise and terror, the melted lead was driven out of the wood with such force, as actually to strike against the cieling. None of the lead struck his face; but, had he been looking over it, probably his eyes would have been burnt out.

'So you see, my dear Lucy,' concluded her father, 'that it is particularly necessary, that children should be careful in trying experiments, as they are not acquainted with the nature or properties of the things, with which they meddle. When I filled the bit of wet elder wood with hot lead, I did not know, or recollect, that the heat of the lead would turn the water into steam, and the expanding suddenly of this steam would cause an explosion.'

This story brought to Harry's recollection an account, which his mother had read to him, of another accident. Lucy had not been present when this was read, and her brother now ran for the book, and showed her the passage. She began to read—and it was as follows:—

'At the cannon foundery in Moorfields—'

Lucy stopped at the first line, and said, that she did not know what was meant by a cannon foundry, and she did not know where Moorfields is. Her father told her, that Moorfields is the name of a part of London ; and that a cannon foundry is a place, where cannon are made ; a foundry is a place where metals are melted, and cast into different shapes. The word is taken from the French word *fondre*, to melt.—Lucy had seen a cannon ; therefore now she quite understood this first line of what she was going to read : Harry was rather impatient, at her requiring so long an explanation ; but her father said she was right, not to go on, without understanding completely what she heard. Lucy then read—

‘ At the cannon foundry, in Moorfields, hot metal was poured into a mould, that accidentally contained a small quantity of water, which was instantly converted into steam, and caused an explosion, that blew the foundry to pieces. A similar accident happened at a foundry in Newcastle, which occurred from a little water having insinuated itself into a hollow brass ball, that was thrown into the melting pot.’

Lucy was astonished to hear, that water, when turned into steam, could have such force ;—from the facts, which she had just heard and read, she perceived, that it is necessary to be careful, in trying experiments, and that it is useful to know the *properties* of



bodies, that we may avoid hurting either ourselves or other people.

This evening it was a frost. Harry and Lucy saw, that the quicksilver in the thermometer was at the *freezing point*. They determined now to try the experiments, which they wished to try, about ice and water. Their father gave them a wide-necked bottle, and Harry filled it up to the bottom of the neck, leaving the neck empty, but he did not cork it. At the same time, Lucy took a common lavender-water bottle, that had wide shoulders, and a very narrow neck; this she also filled up to the bottom of the neck, leaving the neck empty. Harry next filled a common phial bottle up to the mouth, stopped it closely with a cork, and tied the cork down strongly to the neck of the bottle. They hung all these bottles out of doors, on the same place, on the north side of the house.

Their father went this day to dine with a friend, at some distance from home; he was not to return till the next day, at dinner time; so that, the next morning, before breakfast, they missed their accustomed lesson from their father, for which they were sorry. Lucy observed, that her father's room looked dismal without him, and, as there was an unusual silence there, which the children did not like, they went off to the gallery, and comforted themselves, by making as much noise as possible, galloping up and down the gallery, and playing at hare and hound. It was



snowing, so that they could not go out to look at their bottles, and it continued to snow for some hours, till long after the time, when they had finished the day's lessons with their mother.

At last the snow ceased ; and, as the sun began to shine, the children were now afraid, that the water in their bottles might, if it had been frozen, be soon thawed, therefore they put on their hats and great coats as fast as they could, and ran out to the wall, on the north side of the house, and to the place where they had hung up their three bottles the *preceding* day. They found, that the lavender-water bottle, and the bottle that was tightly corked, were broken ; but the bottle with the wide mouth had not been broken. The ice had swelled out through the neck of the bottle, and some way above it, looking like a stopper. This bottle they brought into their mother's dressing room, who put it upon a saucer, in a warm place, and they left it there, that the ice might melt. In the mean time, they went to help their mother to paste some prints into a large paper book. They were longer at this work than they had expected to be ; they had but just finished it, when the dressing-bell rang, they then recollected suddenly their *experiment*, and they said they must go and look whether the ice was melted ; but their hands were now covered with paste, and their mother advised them first to wash their hands and dress themselves, that they might be

sure to be ready, before their father should come home to dinner.

Harry and Lucy ran away, saying, 'Which will be dressed first?'—And in a few minutes they came hurrying from their different rooms, eager to get to their mother's dressing-room.

'I'm ready ! I was here before you !' cried Harry, bursting in.

'Gently, gently, my dear Harry,' said his mother, 'and shut the door after you.'

'Lucy's coming in, ma'am—Ha ! Lucy, I was here first.'

'But I had a great deal more to do, brother,' said Lucy.

Her mother turned and looked at her, as she came into the room, and observed, that Lucy's hair was not combed smoothly, and that one of her shoes was untied—

'And your hands, Lucy ?' said her mother, 'they are not clean—What is all this upon your hands ?'

'Only the paste, ma'am, with which I was pasting those prints ; but I did wash my hands, I assure you, mother.'

'Yes ; but you did not wash them well, I assure you, daughter—so go and wash them again, before you do any thing else ; you must not neglect to keep yourself clean and neat. This pocket-hole of your frock is torn almost from the top to the bottom.'

'Yes, mother ; I tore it as I was coming down stairs ; it caught upon a nail in the passage.'

'Go and put on another frock, and mend

this pocket-hole, before you do any thing else, Lucy,' said her mother :—' It is more necessary, that a girl should be clean and neat, than that she should try experiments.'

Lucy blushed, and went away to do what her mother desired.

' Mother, I am sure it was partly my fault,' said Harry, ' because I hurried her too much ; but, to make amends, I know what I will do for her.'

Then he ran for a pair of pincers, which his father had given to him ; with some little difficulty he took the nail out, on which Lucy's gown had been caught ; and, with some little difficulty, Lucy washed the paste off her hands, and mended her gown.

When they went to look at their experiment, they found that the ice, which they had left in the bottle, was quite melted, and that the water had sunk to the place, where it had been before it was frozen. The top of the water just came to the bottom of the neck of the bottle. So they were convinced that water takes up less room than ice ; or, in other words, that water, when it is frozen, takes up more room, than it does when it is not frozen.

When their father came home this day to dinner, Harry and Lucy told him the *result*, or end, of their experiments ; and they said, that the experiments had turned out, just as he had foretold that they would. Their father said, that he was glad that they had tried the

experiments, and had satisfied themselves of the truth.

After dinner, the children ran eagerly for the wide-necked bottle, that they might show their father, that the water was *really* exactly at the place, where it was before it had been frozen. They had left the bottle on the hearth, in their mother's dressing-room; and, as they knew exactly the spot where they had left it, they thought they could find it without a candle, especially as they expected that there would be a little glimmering light from the fire in the dressing-room. However the fire, being almost out, they could scarcely see their way. They felt about, near the corner of the chimney, but no bottle was there; they felt water on the hearth.

'O! our bottle is broken!' exclaimed Lucy—'Who has done this?'

'Are you sure it is broken?—May be it is not,' said Harry; 'I will open the shutters, and then we shall see by the moonlight.'

He drew up the curtain, unbarred and opened the shutters; then they saw, alas! that their bottle was broken. The dog was lying before the fire, and, in taking his customary place, had thrown down the bottle.

'O, our dear, dear wide-necked bottle, with which I intended to do so many things!' cried Lucy.

'Fie! fie! naughty dog!—down!—down, sirrah!' cried Harry, as the dog, now wa-

kening, attempted to leap up and caress him—Down, sirrah !’

‘ But don’t call him *sirrah* ! Don’t be in passion with him,’ said Lucy :—‘ He did not know—he did not mean to do us any harm ; it was our fault, for leaving the bottle here, just in his way. Come here, poor fellow,’ added she, as the dog was slinking away ashamed. Harry, ashamed too of his anger, joined Lucy in patting him, and both he and his sister were now pleased with themselves, for bearing their disappointment with good humor. The moon shone full on the window, and Harry, as he went to close the shutters again, called Lucy to look at ‘ the beautiful blue sky, and the glorious number of bright stars in the heavens.’

Lucy, as she looked and admired them, recollected something she had read, in Sandford and Merton, about the names and places of the stars ; the *pole star*, and *Charles’s wain*, and the *great bear*, and the *little bear*. At the time when she had read it, she had not understood it, because she had never observed the places of the stars in the sky ; but this night, she and Harry read over that part of Sandford and Merton again ; and, when they looked at the stars, and compared them with the description, they understood it perfectly. They went on to read the account of the use, which little Sandford made of his knowledge of the stars, when he lost his way

one night in crossing a great moor, between his father's house and his uncle's.

Harry and Lucy were glad, that they had found something entertaining to read to themselves ; because their father and mother were both engaged with their own employments this night, and could not attend to them. While they were reading, Lucy wanted her pencil, to draw for Harry the figure of Charles's wain, and to make the map of the sky, with dots for each star, which Tommy Merton had proposed to make. But Lucy had not her pencil in her pocket ; she had left it in her mother's dressing-room, on the chimney-piece, as well as she recollected ; and, when she went to look for the pencil, by the fire light, she saw the pieces of her broken bottle : she had a great mind to put them into the fire, for she knew that glass would melt, if it was put into the fire. She recollected the print of the glass-blower, which she had seen in her *Book of Trades*, and she wished much to see glass melted. But recollecting also at this moment, that she had done mischief, by throwing the chestnuts into the fire, she determined not to throw this glass into the fire, without asking first, whether it would do any harm. So she carried the broken glass carefully to the room where her father and mother were sitting, and she asked, if she might put it into the fire.

Her father, pleased by her prudence, was so good, as to leave what he was doing, to





show Lucy what she wished to see. He put the bits of glass into the hottest part of the fire, and in a few minutes the glass became red-hot. Then he sent Harry to his workshop for a pair of pincers. Harry knew the names, and shape, and places of all his father's tools ; so he easily found the pincers, and he brought them. Lucy blew the fire, till it became of a *white heat* ; then her father took the thick part of the bottom of the glass out of the fire. It was now melted into a lump, he held it by one end with the hot tongs, and

desired Harry to take hold of the other end of the glass with the pincers, and to try to pull it out as far as he could. To Lucy's surprise, the glass was now so soft and yielding, that Harry pulled it out as easily as he could have pulled out warm sealing-wax ; and he drew out the glass across the little table, at which his mother was sitting.—When drawn out, the glass looked like a thin shining thread—like what is called *spun sugar*—that is, sugar which has been heated and melted, and drawn out in a *similar* (or like) manner.

Harry and Lucy were entertained by seeing this, and they asked several questions about the manner, in which different glass things are made—they asked, for instance, how the panes of glass, which they saw in the windows are made ; and how looking-glasses are made ; and they wondered how the *cut glass*, or that which they saw in chandeliers, is made. But their father told them, that they could not possibly learn so many things at once. That perhaps, at some future time, he should have an opportunity of taking them to see a glasshouse, and of showing them how different kinds of glass are made.

‘To-morrow, father, will you take us ?’ said Lucy ; ‘or next week ?’

‘No, neither to-morrow, my dear, nor next week—you must not see, nor attempt to learn a variety of things at once, else you will learn nothing well, but will only have a

jumble of things in your head. Now go to bed, my dear children.'

Then Harry put the pincers into their place, and threw the bits of glass into the fire ; and Lucy put by their books, their pencil and paper, and their map of the stars ; they were careful to put all these things into their places, because their mother had advised them not to make it troublesome or inconvenient to show them experiments, or to let them amuse themselves in the same room with her and with their father.

' Now we have put all our things into their places, mother,' said Lucy ; and, after we have gone to bed, you will not have the trouble of doing that for us—Good night. You will like, that we should try experiments another time, I hope, mother, because we have not been troublesome.'

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In the morning, Harry and Lucy went to their father's room ; and Harry observed that they had lost a day by their father's not being at home. ' So now,' added he, ' we must make up for it, and *get on* to the barometer.'

Lucy was, at this instant, mixing up the lather for her father, who was going to shave. She took a tobacco-pipe. and blew a bubble into the air ; and when it burst, she said—

' Do, Harry, let me ask one more question about a bubble. Father, when a bubble bursts,

does the air, which was withinside of it, stay where it was—or what becomes of it ?’

‘ I believe that it does not stay exactly in the same place where it was,’ said her father ; ‘ it spreads, and mixes with the rest of the air in the room. It is supposed, that, when there is less air in one place than in another, the air, which is collected in the place which contains the most of it, rushes into that which contains the least of it.’

‘ But what makes some places fuller of air than others ?’ said Lucy.

Her father said, that he did not know ; but he reminded Lucy, that air can be squeezed into a smaller space, than it usually occupies.

‘ Why it occupies the whole world, does it not ?’ said Harry.

‘ No, brother, not the whole world, you know ; for stones, and trees, and animals, have places in the world ; but the air is all round us, and is in every place where there is nothing else.’

‘ That is true, or nearly true, Lucy,’ said her father. ‘ Harry, do you know any other name, by which people sometimes call the air, that is all round us ?’

Harry said, that he did not recollect any other name for it ; but Lucy said that she believed the air round us is sometimes called the *atmosphere* ; and she said she had heard people speak of the *pressure of the atmosphere*, but that she did not clearly understand what they meant.

‘Take this hand fire-screen, my dear,’ said her father; ‘move it upwards and downwards, and backwards and forwards.—What do you feel?’

‘I feel, that I cannot move it quickly,’ said Lucy.

‘What prevents you?—Let Harry answer.’

‘I believe it is the wind,’ said Harry.

‘There is no wind in the room,’ said Lucy.

‘But when you move the screen backwards and forwards, I feel a wind,’ said Harry.

‘It is the moving the screen, which puts the air in the room in motion. You will feel the air, or atmosphere, in any part of the room, if you move against it,’ said his father. ‘Take this little parasol, open it—half—do not fasten it up; now run with it against the air, holding the outside of the parasol from you.’

Harry did so, and found, that, as he ran, the parasol was closed by the air in the room, against which he pressed. Then his father bid him stand on a chair, and let the parasol fall when it was shut; and it fell quickly. He then opened it; and when it was open, Harry let it fall from the same height. It now fell very gently, and Harry perceived that it fell slowly; because, when it was open, it was resisted by the air underneath it in falling: he also observed, that the parasol, as it fell, *made a wind*, as he said.

His father then cut out of a card the shape of a wheel; and he cut the card in several places, from the outside, or *circumference*,

towards the centre, and he turned these bits of cards sloping, so as to make a little windmill : he put a large pin through the centre of it, and stuck this pin into the uncut end of a pencil, so as to make a handle. Then he blew against it ; and when he found that he could blow it round steadily, he gave it to Lucy, and, opening the window, desired her to hold it against the air at the open window, which, rushing in suddenly, turned the little windmill. Then he shut the window, and bid Lucy run with the windmill, as fast as she could, from one end of the room to the other, holding it in such a manner, that it might press against the air as she ran. She did so, and the windmill turned quickly ; then she and Harry perceived, that the forcing and pressing against the air made the windmill turn round in the same manner, as it had done when the wind blew against it.

‘ Harry,’ said his father, ‘ take these bellows, blow the fire with them.—What comes out of the *nose*, or nozzle of the bellows, as it is called ?’

‘ Air or wind,’ said Harry.

‘ What makes that wind ?’

‘ My blowing the bellows,’ said Harry.

‘ What do you mean by blowing the bellows ?’

‘ Making the bellows blow,’ said Harry.

‘ But how do you make the bellows blow ?’

‘ By pulling up the top of the bellows, and shutting it down,’ said Harry.



‘Very true,’ said his father; ‘that opens the bellows, and makes room for air to go into them.’

‘The air,’ said Harry, ‘goes in at the large hole in the bottom of the bellows.’

‘It does so,’ said his father, and some goes in at the pipe, or nose : but what hinders the air from going out of the large hole in the bottom, where it went in ?’

Harry said, ‘There is a little flap, or door, that shuts down, when I blow the bellows.’

‘That little door,’ said his father, ‘or *valve*, as it is called, falls down by its own weight, when you blow the bellows, and it shuts that hole; and the air, which is then in the bellows, goes out at the pipe into the fire. If I were to paste a piece of paper over the hole, in the bottom of the bellows, what would happen ?’

‘The air,’ said Harry, ‘would come into the bellows at the nose, when I lift up the top, and would go out again at the nose, when I shut the bellows.’

‘Then,’ asked his father, ‘what is the use of the hole, at the bottom of the *valve* ?’

‘I believe,’ answered Harry, ‘it is to let the air in more quickly, and more readily.’

‘It is so,’ said his father : ‘I will paste a piece of paper over the hole, in the bottom of the bellows, and, when it is dry, to-morrow, we will see what will happen.—Now let me finish dressing myself.’

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This day was very cold, and the fire in the breakfast room did not burn so well as usual. Harry's father, who was a man able to do things with his own hands, went for some dry wood, which he sawed into pieces of a certain length, convenient for putting on the fire. Harry could saw very well, and he assisted his father; Lucy stood by, and she asked him to let her try to saw. At first, Lucy could scarcely move the saw; it seemed to stick in the wood, and she said she wondered how Harry could do it so easily. Harry showed her how to move the saw, and guided her hand at first; and, after a little practice, with some little patience, she got on pretty well. After she had sawed the branch in two, her father split it down the middle, with a *cleaver*, or a little hatchet. He did not allow the children *yet* to meddle with the hatchet, lest they should cut themselves, as it requires some skill, care, and practice, to be able to manage a hatchet well.

Harry and Lucy wished that they might saw wood every day for the fire. They said that it would be pleasant work; and that it would warm them so well, and that it would be so useful!—and they begged their father would lend them a saw, and give them wood to saw, and a block, or a *horse*, to saw upon.

Their father answered: 'My dears, do you think that I have nothing to do, but to get you every thing you want? I am afraid, that, if I were to take the trouble to provide you with

these things, you would soon grow tired, and, perhaps, after sawing half a dozen bits of wood to-day and to-morrow, you would throw aside, and forget it ; as I have sometimes seen you throw aside, and forget, or break toys, which delighted you the first hour or day you possessed them.'

'Break ! O, father ! my dear father !' cried Lucy, '*that* was only the foolish toy *that* lady gave me, of which I could not make any use, nor any diversion in the least ; after I had once looked at it, there was an end of it. I could not move the wooden woman's arms, nor do any thing with her, so I forgot her and left her on the floor, and the footman, by accident, put his foot upon her, when he was bringing in coals. But indeed, father, I never break nor forget my playthings, if I can play with them.—There's my cart ! I have had it a year, a whole year :—And there's my hoop—my battledores and shuttlecock—my jack straws, my cup and ball—and my ivory alphabet.'

'And there's my cart, and my pump, and my bricks, and my top, and our dissected maps,' cried Harry, 'I am never tired of them, I know.—And there is no danger, father, that we should grow tired of a saw, if you will only be so good as to give us one ; because it will always give us something to do, and, as Lucy says, we grow tired only of things that we cannot make any use of. Pray, father, try us.'

Their father was so kind, as to grant their request ; he lent them a saw, and a *horse*, that

held the wood which they wanted to saw ; and he allowed them to work in a little room, on one side of the hall, where there was no furniture, but which had been used as a sort of lumber room. Here was kept a provision of wood for the winter, and there was plenty of branches, which the children could saw ; their father told them to saw these into pieces of about a foot or eighteen inches long ; and he said, that when they were sawed into these pieces, he would have them split.

‘ Father ! ’ cried Harry, ‘ let us do it *all* ourselves. I can split them, I assure you ; and we will take care not to cut ourselves, if you will lend us the little hatchet. Now, father, I will show you how well I can use the hatchet. Lucy may saw, and I will split.’

Their father however would not lend them the hatchet yet. He told them, that, if they sawed only small branches, such as he would give them, these need not be split asunder afterwards. They sawed this morning wood enough for the evening’s fire. This evening they enjoyed the first fire made with wood of their own sawing—the first fire acquired by the labor of their own hands.

‘ Did you ever see such a delightful blaze in your life, mother ? ’ said Lucy.

‘ Father,’ said Harry, ‘ this fire has warmed us twice—I mean, the sawing the wood warmed us, while we were at work ; and now it warms us again whilst it is burning. Mother, would you be so good to begin to read about

the way of walking in dangerous places, now Lucy and I are sitting so comfortable at your feet, and the fire is blazing so finely ?

Their kind mother smiled, and she began to read as follows :—

‘ In the neighborhood of Mount Pilate, there are people who give lessons in the art of walking, as regularly as lessons in dancing are given elsewhere. It is of the greatest importance, in certain dangerous places, to know which foot to make use of, or which hand to use, to preserve the balance of the body ; and when you are to step on sharp pointed rocks, you must be sure when you are to put down your heel or your toe first ; for want of instruction, or for want of attending to these instructions, you might fall down a precipice, or be obliged to remain in a painful attitude, without daring to go forwards or backwards.

‘ The shoes usually worn on these mountains are merely soles of thin light wood, tied on the foot with leather straps. There are iron horse-shoe nails, at the bottom of the soles, which stand out from the sole near half an inch. The *mountain climber* depends chiefly on his stick, or pole. This pole must be light and pliable, and yet strong enough to bear the weight of a man, if it should happen, as it sometimes does, that the pole is stretched from one point of a rock to another, over the man’s head, while he clings, with both hands to it, as he passes beneath. The point of the pole is armed with iron at least two inches long.



‘When a man wants to go down a steep descent, he does not set out with his face turned towards the bottom of the hill, because his whole body would be out of a perpendicular line——’

‘Out of a perpendicular line!’ interrupted Lucy—‘Mother, I am not clear about *perpendicular* and *horizontal*——’

‘No!’ cried Harry, starting up; ‘then, my dear Lucy, I will make you clear about them in an instant, and for ever. Look,’ cried he, as he stood bolt upright, ‘now I am perpendicular; and now,’ continued he, throwing himself flat down on the carpet, ‘now I am horizontal.’

‘Thank you.—Now, mother, I shall understand it.’

‘The man’s whole body would be out of a perpendicular line, so that, when he advanced three or four steps, as the hill becomes steeper, he would fall forward; therefore, the man turns his side toward the bottom of the hill. In this position, he has one foot higher than the other; if his left side is toward the bottom of the hill, his right foot must stand highest; this must be observed, that you may understand the manner in which he then makes use of his stick. He holds it sloping with both his hands, one of its points resting against the ground; and this point must be above the place where his highest foot stands. The right hand must be at the bottom of the stick, and the left is at the middle of it. In this attitude



the man leans on the stick, with which he rakes or scrapes away the ground, as he descends the hill. You may imagine with what swiftness he goes, and without the least danger; because his body, leaning on the stick, and approaching the ground, there is no danger of falling. If, by chance, the man's feet were to slip, the weight of his body leaning on the stick, it is necessary only to slide the left hand, which was in the middle, towards the bottom of the stick. Then it is impossible, that the man should slip far; because the stick, becoming almost perpendicular, and being grasped near the bottom by both his hands, it catches against the least obstacle or hollow in the ground; and this is sufficient to stop the man from sliding further downwards.

‘In places where there are a great number of loose pebbles, as the most skilful walker might slide down along with the loose pebbles, two or three walkers join, and agree to go together; they provide themselves with a long pole, which they all hold with one hand; by these means, if one slips, the others hold him up. If all the party slip, which may chance to happen, he, who first quits his hold of the pole, is punished in whatever way the others think proper.’

‘My dear little Lucy,’ said her mother, putting down the book, and looking at Lucy, whose eyes were closed, and whose head was nodding—

‘My dear little girl, you are just asleep.’

‘Asleep!—O no, mother, I am not asleep at all,’ cried Lucy, rousing herself.

‘My dear, there is nothing shameful in being sleepy, especially at the hour, when it is time for you to go to bed. Only do not let me read to you, when you are sleepy, because you cannot possibly attend to what is read; and you would get the habit of hearing my voice going on, without minding or understanding what I say.’

‘O, mother! I beg your pardon: I assure you I heard the last words you read—it was something about *punished as they thought proper*; but I believe, mother, I was sleeping a little, too, for those words joined somehow with my dream, and I was dreaming about a saw, and sawing wood; and I thought, that, as I was sawing, I slipped, and saw, and wood, and horse and all, slipped, and were sliding down a hill; and just then I heard the words punished as they thought proper.’

‘I know the reason she is so *shockingly* sleepy,’ cried Harry; ‘it is because she worked so hard this morning, sawing; and she is not so strong, you know, as I am.’

‘There is nothing *shocking*,’ said his father, laughing—‘there is nothing shocking in your sister’s being sleepy. Good night, Lucy, my dear, go to bed.—Good night, Harry.’

‘No, father, not good night to me pray—I am not at all sleepy. I was thinking how I should like to live on that mountain, and slide down, with my pole in my hand, and learn

to walk in dangerous places. But here there are no precipices, father ; and I cannot learn to walk, as they do on Mount Pilate.'

'This is a lamentable case indeed, Harry,' said his father ; 'but, if you are so exceedingly anxious to learn to walk among precipices, I can tell you how a celebrated traveller says, that you may learn to do it, even in this flat country.'

'Can you, father ?—O, pray do tell me.'

'Shut your eyes, and imagine yourself among precipices, and walk on ; and M. de Saussure says, you may accustom yourself so to the idea of danger, that you would be much less terrified afterwards, if you were among real precipices, than another person would, who had never pursued this method.'

'Is this true, father ?'

'I do not know, for I have never tried it. But I should think, that you might practise walking over a narrow plank, that was raised a foot from the ground, and, if you learn to balance your body, and walk well upon that, if you were not afraid, you would be better able to walk steadily over any narrow bridge, where there was a precipice, or water beneath.'

'So I could,' said Harry ; 'and I will try this experiment to-morrow. There is a long ladder, lying on the grass before the door, and I will walk on one side of the ladder, and Lucy on the other (for I suppose she will not be asleep to-morrow,) and we shall see who

slips first. Good night, mother—good night, father—and thank you.'

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Lucy was quite rested and refreshed, when she wakened the next morning ; and she went into her father's room, with her brother, at the usual hour.

The paper, which had been pasted over the hole in the bellows, was now dry ; and Harry found, that, when he lifted up the top, the air came into the bellows at the nose ; but it did not come in so readily, as when the hole in the bottom was open. Harry's father now put a peg into the nose of the bellows, and desired Harry to blow. Harry, with great difficulty, lifted up the top of the bellows slowly. He knew, that this difficulty was occasioned by the shutting up the opening at the valve of the bellows and at the nose ; and he asked his father, how any air could now get in.

His father told him, that bellows cannot be so well made, as to hinder the air from forcing its way into them, at the place where the nose is fastened to the leather ; and that, besides this, the air gets in between the leather and the wood.

' I see, father, the paper, which you pasted over the hole in the bellows, sinks inwards,' said Harry, ' when you lift the top, and swells outwards, when you shut it down.'

' It does so, my dear ; and, if the other parts of the bellows were air-tight (as it is called,)

the paper would be broken inwards, when I pull up the bellows.'

'I suppose, father, if it was not such strong paper, it would break now, when you lift it up suddenly.'

'It would, my dear :—I will wet the paper, which will make it softer, and more *fragile*.'

'What is *fragile*, father ?'

'That which can be easily broken, Harry.'

'Now you see, that lifting the top quickly has burst the paper.'

'Yes, father, I see that the air, endeavoring to rush in, has broken the paper ; the edges of it are all blown inwards.'

'You perceive then, Harry, that the air, which is in the room and every where else, is always forcing itself into any empty space ; and that, if it cannot force its way immediately, it drives any thing before it, which it can move, into that space.'

'But I want to know,' said Harry, 'what makes the parts of air fly from each other ?'

His father answered, that he did not know ; 'but I do know,' said he, 'that, if heat be added to air, the parts of the air separate from each other to a greater distance, and with greater force, than when they are colder. 'Now, Harry,' continued he, 'I will close the valve, or door, of the bellows, and if we were to put the end of the bellows into this bowl of water, and, if we were to open the bellows, what would happen ?'——'The water would go into the bellows,' said Harry.



‘Why should it go in?’ said his father; ‘the parts of water, you know, do not fly from each other, in all directions, like those of air. If the bellows were lower than the bowl, the water might fall down into them; but you see, that the bellows are higher than the water.’

‘I do not think,’ said Harry, ‘that the water would move itself into the bellows; it is the air, on the outside of the water, which would rush into the bellows, if the water were not in the way; the air drives the water before it into the empty part of the bellows.’

Harry’s father then took a tumbler in his hand, and filled it with water, and said—‘If this tumbler, that is full of water, be emptied of the water, the air, that is in the room, will enter into the tumbler, whether it be held in any part of the room, upwards, or downwards, or sideways.’ He emptied the tumbler. ‘Now,’ continued he, ‘the air fills the space in the tumbler, which the water did fill; and, whichever way I hold the mouth of the glass, whether upwards or downwards, to this side or to that, the air would go into it, and fill it.’

‘So it is full of air, at this very moment, is it?’ said Lucy. ‘But how can you be sure of that, father!—because we cannot see the air.’

‘No; but we can feel it,’ said Harry. ‘Wet your finger, and put it into the tumbler, and move it about quickly, and you will feel the air.—I hope you are satisfied now,’ added he, laughing, as Lucy gravely put her finger into the tumbler, and said, seriously,



‘Yes, I am satisfied now.’

‘That is right, Lucy,’ said her father ; ‘take nothing for granted. Now observe what happens, when I put this tumbler, with its mouth downwards into the water, in this basin. Does the water withinside of the tumbler rise higher than the water on the outside of it, or does it not rise so high ?’

‘It does not rise quite so high,’ said Lucy.

‘What do you think is in that space, which you see above the water in the tumbler ?’

Lucy, at first, hastily answered, that there was *nothing* ; but, recollecting herself, she said there was air ; and she just said the word air at the same moment when Harry said it.

‘And now suppose, that I could take away that air, which is in the glass, immediately over the water—What do you think would happen when that air was taken away ?’

Lucy said, that she did not think that anything would happen.

Harry said, that he thought, that the water would rise in the glass, and fill the place, which the air had filled.

‘Very right, Harry,’ said his father—‘it would.’

‘O ! to be sure, so it would,’ said Lucy ; ‘but I did not say *that*, because I was thinking you meant quite a different sort of thing, father—When you said *what would* HAPPEN ? I thought you meant to ask, if any accident would happen—if the glass would be broken suddenly, or something of that sort—O ! to be

sure, I know the water would rise in the glass.'

'And do you know, Lucy, why it would rise in the glass, or what would make it rise?'

Lucy could not tell; all she could say was, that the water would rise, because there was room for it to rise; but her brother said he believed, that the air in the room, the air that was all over the water in this basin, in which the tumbler is turned down, would press upon that water, and, by pressing it so, would force it up into the glass, if there was no air, or any thing else in the glass, to prevent the water from rising.

His father, without telling Harry whether he was right or wrong, said, that he would try this for him.

But just then their mother came in, and told their father, that breakfast had been ready some time; and she was afraid, that, if he did not come soon, the muffins would be quite cold. Immediately, their father made a great deal of haste to get ready—Harry smiled, and said—

'Ha! ha!—see what haste father makes, now he knows the muffins are come!—he loves muffins, I see, as well as I do!'

'I dare say he loves muffins, and so do I,' said Lucy; 'but I know, Harry, it is not all for the sake of the muffins, that he is making this wonderful haste—there's another reason.'

'What other reason?' said Harry.

'Because,' whispered Lucy, 'he loves mother, as well as muffins, and he does not like

to keep her waiting for breakfast *always* ; particularly when she is so good, you know, and is never angry.'

'I wonder whether you will be as good, when you grow up,' said Harry, laughing—'No, no; I dare say, you will frown, this way, at your husband, and say, 'I wonder, Mr. Slow, you are never ready for breakfast!'

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'Now, father! this morning,' said Harry, 'I hope we are to see the experiment, which you were going to show us yesterday, just when mother and the muffins came. You know, father, that you asked us what would happen, if you could take away all the air, that is in this tumbler, between the top of the water and the glass, and Lucy said *nothing* would happen; but she was wrong.'

'Only at first, brother; I was only wrong at first, when I did not understand father's question; afterwards, you know, I was as right as you were, for I said the water would rise up higher in the glass, to be sure.'

'Yes, but then you did not know the reason why it would rise, and I did; for when father asked me, I said, that the air in the room, the air, that is all over the water in this basin, in which the tumbler is turned down, would press upon that water, and force it up into the glass, if there was no air left in the glass, to hinder it.'

‘ Well, I know that,’ said Lucy, ‘ as well as you.’

‘ Yes, when I tell it you,’ cried Harry ; ‘ but I said it at first ; I was right from the beginning.’

‘ Come, come, my dear children, no boasting, Harry—no disputing, Lucy ; and then you will both be right. What signifies, which of you said it first, if you both know it at last ? Now, Harry, turn your attention to this, and you, Lucy : I am going to try an experiment, that will prove to you whether the water will or will not rise in the glass, when some of the air above it is taken away.’

‘ But I can’t imagine, father,’ said Harry, ‘ how you will contrive to get all that air out of the glass.’

‘ I cannot easily get all the air out of the glass—I cannot easily produce what is called a perfect *vacuum*, that is, a place where there is nothing, no air, nor any thing else ; but, though I cannot produce a vacuum in the top of this glass, by taking away *all* the air, I can easily take away some of it.’

‘ How, father?’ said Harry and Lucy at once—Their father answered,—‘ You shall see ?’

Then he went for a crooked, or bent tube of glass—it was nearly in the shape of a capital U—He told Harry, that tubes of this sort are called syphons. He put one *leg* of this tube under the bottom of the tumbler, up through the water in the tumbler, into the place which appeared empty.

He now bid Harry suck at the other end of

the syphon—Harry did so ; and as fast as he sucked, the water rose in the tumbler ; but, when Harry took away his mouth, the water fell again.

‘ Why does this happen, Harry ?’

‘ It happens, I believe, father, because, when I sucked, I took away the air, that was above the water in the tumbler ; and when I left off sucking, and took my mouth away, the air went again through the syphon into the tumbler above the water.’

‘ Just so, Harry. Now the same thing would happen if I could take away the air, or lessen it, by any means, in the tumbler. If I could fill, or partly fill, the tumbler, with any thing that could be taken away from beneath the tumbler, while it stands in the water that is in the basin, then we should see the water rise in the tumbler, in the same manner as if the air were sucked out of it——What shall we put into it that we can readily take out, without disturbing the tumbler ?’

‘ I don’t know,’ said Harry.

‘ Here,’ said his father, ‘ is a little *spool*, or roller, upon which silk is usually wound—Now I will put this into a little frame of tin, that will support it under the glass tumbler above the water. Upon this, I have wound some very broad tape so as to fill up a large space in the tumbler : I pull one end of the tape under the bottom of the tumbler, through the water that is in the saucer, so that I can unwind the whole of the tape without disturbing

the tumbler. You see, that the water rises in the tumbler, as I unwind, and draw out the tape; and, now that all is drawn out, the water has filled as much of the tumbler as had before been filled by the tape.'

'That is very pretty,' said Harry; 'I understand it. When the tape was taken away, the room, that it filled would have been supplied with air, if air could have got into the tumbler; but, as it could not get in, it forced the water in the basin to go up into the tumbler.'

'Now I will show you, my dear children, another method of trying this experiment. I make a little stand of halfpence under the tumbler, upon which I can put a piece of paper, without its being wet by the water in the basin—I set fire to the paper; and whilst it is flaming, I put the tumbler quickly over the flame into the water—now you see the flame goes out and the water rises.'

'Yes, father; I suppose the flame burns out some of the air.'

'It does, Harry, consume a little of the air in the tumbler; but that is not the cause why so much water rises. You saw, that the flame took up a considerable quantity of room in the tumbler while it was burning; but, the moment that the glass covered the flame it went out: and then the room, which the flame took up, was supplied by the water, rising from the saucer.'

'Yes, father, the water was driven in by the air, that wanted to get into the tumbler.'



‘Just so, Harry. Now, instead of putting a piece of lighted paper upon the little stand of halfpence, I put a piece of tow, dipped in turpentine upon it; this, you see, makes a larger flame; and, when this is extinguished, or put out, by placing the glass quickly over it, more water rises than in the former experiment: and, if I were to dip the tow into spirit of wine, and light it, it would answer the same purpose as tow dipped in turpentine.’

Their father warned the children against the danger of having more than a very small quantity of turpentine or spirit of wine brought near to the candle or to the fire, as it might easily catch fire, and set fire to their clothes, or to the furniture in the room. ‘All experiments in which fire is necessary,’ their father said, ‘children should never attempt to try, when they are in a room by themselves.—Some grown-up person should always be present, to prevent accidents, or to assist, if any accident should happen.’

The children both promised their father, that they would take care never to meddle with fire when he or their mother was not present, or to try any dangerous experiments.

Harry then turned again to look at the tumbler, and repeated, that it was really very pretty, to see the water rise in the tumbler, pressed up by the air, that was over the water in the basin. Harry seemed still doubtful whether Lucy understood it.

‘You see, Lucy, the air presses this water

first, and that presses it up into the tumbler.'

'Yes, I understand it perfectly,' said Lucy.

'But, Harry,' said his father, 'you say that the air presses the water in the basin, up in the glass tumbler. What do you think would happen, if there was no water in the basin?'

'I believe the water would run out of the tumbler,' said Lucy.

'So it would,' said her father, 'unless the bottom of the glass was ground quite smooth, and the basin also ground quite smooth.'

'And what would happen, if the basin and tumbler were ground quite smooth?' said Harry.

'Then,' replied his father, 'if you lifted up the tumbler, the basin would come up with it from the table, and seem to stick to it.'

'I should like very much to see that experiment,' said Lucy; 'but we have no glass vessel nor basin ground smooth enough, I believe.'

'No; but I can show you an experiment equally satisfactory, without them,' said their father.

'I fill this ale glass with water, and I cover it with a card, having first wetted the side of the card, which is next to the glass—I now put the palm of my hand on the card, and I turn the glass upside down on the card, which lies on my hand. You now see, that, though I have taken away my hand, the card sticks to the glass.'

'That is very pretty!' cried Lucy.

'But why does not the water fall out?' said Harry.



‘Because the card keeps it in,’ said Lucy.

‘Why does it keep it in?’ said Harry.

‘Because the card sticks to the glass,’ said Lucy.

‘And what makes it stick to the glass?’ said Harry.

Lucy did not answer immediately; but her father asked Harry if he knew.

Harry said it did not stick to the glass; but it is held close against the glass by the pressure of the air that is in the room.’

‘That is quite right,’ said his father; ‘by the pressure of the atmosphere. I am glad, Harry, that you know, that the air presses upwards, as well as downwards, and sideways, and in all directions.’

‘Father,’ said Lucy, ‘will you be so good, as to try that experiment again?’

‘Here you see the card remains close to the bottom of the glass,’ said their father.

‘But, father, the glass is not full,’ said Lucy.

‘Yes, it is full,’ said Harry; ‘though it is not quite full of water, it is full of water and air.’

‘I left it so on purpose,’ said his father.

‘Now I will hold it to the fire, and you will see what will happen.’

In less than half a minute, they saw the card drop off, and the water fall on the hearth.

‘What is the cause of that?’ said his father.

‘The heat of the fire swells, or expands the air that is in the glass over the water, and forces it and the card downwards,’ said Harry.

‘There was also a little steam formed,’ said Lucy.

‘There was,’ said her father. ‘Now let us take care, and not be late at breakfast this morning.’

The children went to tell their mother of this last experiment, which pleased them particularly.

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As soon as Harry and Lucy had finished their lessons this day, they went into what they now called ‘*their wood-room*,’ and sawed the provision of wood for the evening fire; and, this day, Harry’s father lent him a little hatchet, for a few minutes, while he stood by, to see whether Harry would be able to use it, without hurting himself. Harry split half a



dozen billets of wood, and begged, that, as he had done no mischief to himself or to any body, or any thing else, he might have the hatchet the next day, to split the wood in the same manner. But his father said—

‘It is not likely that I should have time to stand by to-morrow, to see you split wood, though I happened to have leisure just now ; and I cannot yet trust you with the hatchet, when you are alone. But, Lucy, what makes you look so blue ? You look as if you were very cold ; I thought you had warmed yourself with sawing.’

‘No, father, because I have not been sawing. Harry had the saw—You know that two

of us could not use the saw at the same time ? and so I had nothing to do but to give him the wood when he wanted it, or to hold it for him when he was sawing ; and that, you know, father, was very cold work. That is what makes me look so blue, I suppose.'

'Well, to-morrow you shall saw, and I will hold the wood,' said Harry, or we will take it by turns, that will be better ; you shall begin, and saw one stick through, and I will hold the wood ; then I will saw, and you shall hold the wood ; that will be fair, will not it, father ? —Quite just—I must be just, to be sure.'

'Yes,' said his father. 'In your code of laws, for the children on Mount Pilate, do not forget that—Nobody can govern well, that is not just.'

'That's true,' said Harry, looking very thoughtful—'Now, which must I put first, honesty or justice ?'

'I think,' said Lucy, and she paused.

'What do you think, my dear ?' said her father.

'I was going to say, that I thought, that honesty is only a sort of justice.'

'You thought very rightly, my dear. It is so.'

'And what are you thinking of, yourself, may I ask you, father ?' said Lucy ; 'for you looked at the saw, as if you were thinking something more about our sawing.'

'I was so,' answered her father—'I was just thinking of a way, by which you could both saw together, with the same saw.'



‘How, father?’

‘Invent the way for yourself, my dear.’

‘*Invent*, father?—can I *invent*?’ said Lucy.

‘Yes, my dear; I do not know of any thing that should hinder you. To invent, you know, means——what does it mean, Lucy?’

‘It means—to invent means to——think,’ said Lucy; ‘but that is not all it means; for I think, very often, without inventing any thing——It means to contrive.’

‘And what does to contrive mean?’

‘It means to make a contrivance for doing any thing——O, father, you are going to ask me what a contrivance means—stay, I will begin again—to invent, means to think of, and to find out a new way of doing something, that you want to do.’

‘Well, now try, if you can, to invent some way of using this saw, so that you and your brother could work with it at the same time. Harry, think of it too; and whichever thinks of any thing first, speak.’

‘Father,’ said Harry, ‘I recollect the day we went to the farmer, who lives on the hill, Farmer *Snug*, as Lucy and I called him, our seeing two men sawing in a sort of pit.’

‘I remember it,’ cried Lucy; ‘and father told me it was called a sawpit.’

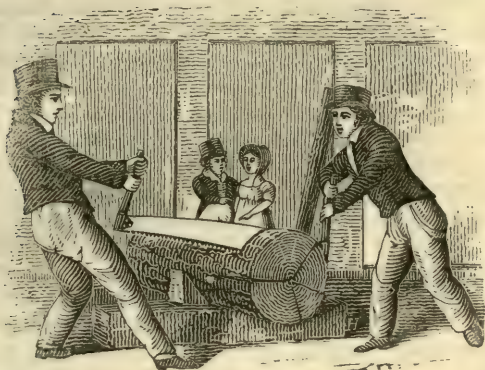
‘And one of the men stood on a board, that was across the top of the pit, and the other man stood at the bottom of the pit, and they had a kind of saw, that was fixed upright, perpendicularly, this way, in a sort of frame, and

one of the men pulled it up, and the other pulled it down, through the wood they were sawing. Now, if Lucy and I had such a place to saw in, or if I stood upon something very high, and we had another handle to this saw——'

'But, brother,' interrupted Lucy, 'what would be the use to us, of pulling the saw up and down that way ; if we had but a handle at each end of this saw, why could not we saw with it, pulling it backwards and forwards, just as we stand now, without any thing more?'

'Very true, Lucy,' said her father, 'now you have found out, or invented, a kind of saw, which was invented long ago by some one else, and which is at present in common use—it is called *a cross-cut saw* : I will get you a cross-cut saw. Now put on your hats ; I am going to walk, to see Farmer *Snug*, as you call him, about some business of my own, and you may both come with me.'

Harry and Lucy got themselves ready in a minute, and ran after their father, who never waited for them. When they came to the farmer's house, while their father was talking to the farmer about his business, they ran to the sawpit, in hopes of seeing the men sawing ; but no men were at work there. As they returned they heard the sound of men sawing in a shed near the house, and they looked into the shed, as they passed, and they found two men sawing the trunk of a tree across, with something like the sort of saw, which Lucy had described to her father. They went back



to Farmer Snug's to tell this to their father : but he was busy talking, and they did not interrupt him. While he was engaged with the farmer, Harry and Lucy amused themselves by looking at every thing in the parlor and kitchen of this cottage. There was one thing in the parlor, which they had never seen before—Over the chimney-piece hung a glass vial bottle, in which there was a sort of wooden cross, or reel, on which thread was wound. This cross was much wider than the mouth or neck of the bottle ; and Harry and Lucy wondered how it could ever have been got into the bottle. As they were examining and considering this, their father and the farmer, having now finished their business, came up to them.

‘ Ah ! you’ve got *that there cur’ous* thing, that reel in the bottle,’ said the farmer ; ‘ it has puzzled my wife, and many a wiser person ; now, master and miss, do you see, to find out how that reel, thread and all, was got, or, as I say, conjured into the bottle. And I don’t doubt, but I might ha’ puzzled myself over it a long time, as well as another, if I had not just been told how it was done.’

‘ O, how I wish I had been by !’ cried Harry.

‘ And I too !’ said Lucy—‘ Pray how was it done, sir ?’

‘ Why, master,—Why, miss, you see, just this way, *very ready*——The glass was, as it were—before it come to be a bottle *like* at all—was taken, and just blown over it, from a man’s mouth with fire and a long pipe—so I was told.’

Harry and Lucy stood looking up in the man’s face, endeavoring to understand what he said ; but, as Farmer Snug had not the art of explaining clearly, it was not easy to comprehend his descriptions.

‘ Then I will tell you what, master,’ said the farmer, growing impatient at finding that he could not explain himself ; ‘ it is an *impossibility* to make a body comprehend it rightly, except they were to see it done, and the man who did it is in our market down here hard by—He is a travelling kind of a strange man, who does not speak English right at all, not being an Englishman born, poor man !—no fault of his ! so, if you think well of it, sir, I

will bid him, when I go betimes to market, call at your house to-morrow,—he is going about the country, to people's houses—he blows glass, and mends weather glasses, and sells 'mometers and the like.'

'Weather glasses! — barometers!' said Harry—O, pray, father, do let him come!'

'Thermometers — he sells thermometers too!' cried Lucy, 'O pray, father, let him come!'

Their father smiled, and said, that he should be obliged to Farmer Snug, if he would desire this man to call in the morning, at half past eight o'clock,—if he could. The family usually breakfasted at nine.

So much for the pleasures of this morning. This evening, Harry and Lucy's father and mother were reading to themselves; and the children entertained themselves with putting in some more stars into their map of the sky: and they looked at the great celestial globe, which their mother had uncovered for them, and they learned the names of the signs of the Zodiac, and the months to which they belong. Lucy showed these to Harry, and said,

'Mother does not know them all herself; let us get them by heart and surprise her.'

Accordingly they learnt them, with some little difficulty.

After they had learnt these, Harry and Lucy refreshed themselves, by playing a game at *jack straws*, or, as some call them, *spillikens*. Lucy had taken off almost all the straws, without shaking one, and, according

to the rules of the game, would, consequently have been victorious ; but, unluckily, a sudden push backward of her father's chair shook her elbow, shook her hand, shook *jack-straw*, just as she was lifting him up, and he fell !

Harry, clapping his hands, exclaimed—

‘ There ! — you shook ! — you shook ! — you’ve lost.’

Lucy looked at her brother, and smiled.

‘ She has lost the game,’ said her mother ; ‘ but she has won a kiss from me, for her good humor.’

Lucy, indeed, bore the loss of her game very good humoredly ; and, when she went to wish her father and mother good night, they both kissed her and smiled upon her.

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‘ The barometer-man is to come to-day, father, at half after eight, and it is half after seven now, father—Will you get up?’ said Harry.

‘ The man who can show us how the reel was put into the bottle,’ added Lucy—‘ Will you not get up, father ?’

Their father rose and dressed himself ; and, as he was dressed by eight o’clock, they had half an hour to spare, before the time when this *much expected* man was appointed to come.

‘ Why should we waste this half hour, Harry?’ said his father ; ‘ let us go on with what we were talking of yesterday morning. Do you recollect the experiments we tried yesterday ?’

‘ Certainly, father,’ said Harry ; ‘ you mean the experiments you showed us, with the



burning tow and the turpentine, to make an empty space—a *vacuum*, I remember, you called it—in the tumbler, that we might see whether the water would rise and fill the place, which the air had filled—Yes, father, I remember all this perfectly.’

‘And I remember the experiment you tried with the roll of tape, father, which you put under the glass—When you unrolled the tape and pulled it gently from under the tumbler, the water went up, and took the place of the tape that was unrolled.’

‘But, father!’ cried Harry, ‘I have thought of something!—I want to ask you a question, father.’

‘Ask it, then, my dear; but you need not begin, by telling me that you want to ask a question.’

‘What I want to say, father, is this——’

‘Think first, my boy, and, when you clearly know what you mean to say, speak; and begin without that foolish preface of *what I want to say is this*.’

‘What I want,’ Harry began from habit, but stopped himself and began again—

‘Would the water run up into a very high vessel, father, as well as it ran into the tumbler, if you suppose that some of the air, in the high vessel, were taken out of it?’

‘Yes,’ answered his father: ‘If the vessel were as high as the room, in which we are, the water would remain in it, if it were quite emptied of air.’

Harry asked, if it would stay in the vessel, were it as high as the house.

‘No, it would not,’ answered his father; ‘because the pressure of the *atmosphere* is not sufficient to hold up the weight of such a column of water, as could be contained in a pipe forty feet high; though it is sufficient to *support* or *sustain*, or hold up, the water that could be contained in a pipe thirty-four feet high.

Harry said he did not understand this.

‘I am not surprised at that,’ said his father; ‘for you are not used to the words *pressure of the atmosphere*, or *column of water*, and to other words which I make use of. But,’ continued his father, ‘if we had a pipe forty feet long, with cocks such as are in tea-urns, fitted well into each end of it, and if the pipe were placed upright against a wall, with the bottom of it in a tub of water, and if the lower cock were shut, and if the upper cock were opened, the pipe might, by means of a tundish, or tunnel, be filled with water. Now, Harry, if the lower cock were open, what would happen?’

‘The water would run out at the bottom,’ answered Harry, ‘and would overflow the tub.’

‘True,’ said his father.

‘But now suppose the pipe were filled again with water; and if the cock at the top were shut and the cock at the bottom opened, under water, would the water in the pipe run out?’

‘No, it would not,’ said Harry; ‘the pressure of the atmosphere, at the bottom of the pipe, would prevent it from falling out.’

‘That would be the case,’ said his father, ‘if the pipe was only thirty-three or thirty-four feet high; but this pipe is forty feet high, so that the water in six feet of the top of the pipe would run out; and, if this were let to run out very gently, the water in the remaining thirty-three or thirty-four feet would continue supported by the *pressure of the atmosphere* on the water in the tub.’

‘Father,’ said Lucy, ‘there is a tub of water in the area under the window in my room; and this would be a fine way of raising water up into my room, without the trouble of carrying it up stairs.’

‘My dear, that is an ingenious thought,’ said her father; ‘but you are mistaken—I will not attempt at present to tell you exactly how—’

‘Here is the barometer man, father!’ interrupted Lucy—‘I saw an odd little man, with a box under his arm, go by the window. Hark!—There he is, knocking at the door.’

The man was shown into a room, which was called the workshop. He was a little, thin man, with a very dark complexion, large black eyes, and, as the children observed, had something ingenious and good-natured in his countenance, though he was ugly. ‘Though he could not speak English well, he made them understand him, by the assistance of signs. He began to open his box, and to produce some of his things; but Harry’s father asked him to rest himself after his walk, and ordered that he should have breakfast brought to him.

Harry and Lucy despatched their breakfast with great expedition; they thought that their father and mother were unusually slow in eating theirs, and that their father drank an uncommon number of dishes of tea; but at last he said—‘No more, thank you, my dear’—and putting aside the newspaper he rose, and said—

‘Now, children, now for *the barometer-man*, as you call him.’

‘Mother!—mother!—pray come with us!’ said the children; they took her by the hand, and they all went together.

‘Now, mother, you shall see what Farmer Snug described to us yesterday,’ said Lucy.

‘No—what he could not describe to us yesterday, you mean,’ said Harry—‘How a reel or a kind of wooden cross, mother, is put into a bottle, or how the bottle is made or blown over the reel—I do not understand it *quite*, yet.’

‘So I perceive, my dear,’ said his mother, smiling; ‘for I have seen the whole process accomplished with a piece of wire.’

‘But this man will show it to us, mother,’ said Lucy. ‘And I generally understand what I see, though I often do not understand what I hear.’

Alas! to Harry’s and Lucy’s great disappointment, this man, when they had, with some difficulty, made him understand what they wanted, told them, that he could not

blow a bottle over a reel, such as they had seen at the farmer's.

This was a sad disappointment!—and, what Harry thought still worse, the man had sold all his barometers. However, he had some little thermometers, and Lucy's mother bought one for her, and gave it to her. Lucy colored all over her face, and her eyes sparkled with pleasure, when her mother put it into her hand, and Harry was almost as glad as she was.

'Is it really for me!—for my own, mother!—I will take care and not break it. Harry, we can hang it up in our wood-room, and see every day how cold, or how hot the room is, before and after we begin to work—and we can try such a number of nice experiments.'

'Pray, sir,' said Lucy to the man, 'how do you make these thermometers?'

The man said he would show her, and he took out of his box some long tubes of glass, and a long brass pipe, and a lamp. It was a lamp with which he could melt glass. When he had lit his lamp, it made a large flame, which he blew with a brass pipe, that he held in his mouth. Her father told her, that this pipe was called a blow-pipe. With it the man blew the flame of the lamp, and directed it to one of the glass tubes, which he held in his other hand. In a little time, the heat began to melt the glass, and it melted into a round ball; this he heated again in the flame of the lamp, and, when the glass was soft and



melting, he closed that end of the pipe, and it looked like a lump of melted glass ; then he blew air with his mouth in through the other end of the glass pipe, till the air blown withinside of the pipe reached the end, which was melting ; and, the air being strongly blown against it, it swelled out into a bubble of melted glass, and thus made the bulb of a thermometer-tube. He left it to cool very slowly, and when it was cool, it became hard and was a perfect thermometer-tube.

Harry's father had some *syphons* and bent tubes of different shapes made for him. His y



was very glad of this ; for he thought he could try many different experiments with these.

The thermometer-man was now paid and dismissed.

As soon as he was gone, Harry and Lucy went to their usual occupations ; for they never missed any day their regular lessons. Then came sawing wood—then walking out——Happy children ! always doing something useful or agreeable.

This evening, when they were sitting round the fire after dinner, and after his father had finished reading the newspaper, when he was not busy, Harry asked him what glass was made of. ‘ I thought you had known that, long ago, Harry,’ said his father—Surely I have told you, have not I ?

‘ Yes, father, I believe—I dare say you have ; but I always forget ; because I never was very curious, or much interested about it till now ; but now, when we have been seeing, and thinking, and talking so much about glass, I think I shall remember what it is made of, if you will be so good as to tell me once more.’

His father desired Harry to bring him some sand, which was lying in a paper in his study—Harry did so. Then his father said to his mother—

‘ I wish I had some alkali, to show the children—some barilla ashes—Have you any in the house ?’

‘ No.’

There was no barilla ashes ; but she recol-

lected that a heap of fern and bean stalks had been lately burned near the house, and the ashes of these were to be easily had.

Some of these ashes were brought upon a plate; and Harry's father placed the ashes and the sand before him, and said—

‘These, when burnt together, would make glass.’

‘I shall never forget it,’ said Harry—‘Now I have seen the real things, of which glass is made, I shall never forget them.’

‘That is what I say too,’ cried Lucy :—‘Seeing things, and seeing them just at the very time I am curious about them, makes me remember easily, and exceedingly well.’

‘Taste these ashes,’ said their father—‘this *pot-ash*, as it is called; wet your finger, take up a little of it, and put it into your mouth.’

Harry and Lucy did so; but they said the ashes had not an agreeable taste. Their father said, that he did not expect that they should think it agreeable; but that he had desired them to taste the ashes, that they might know the taste of what is called alkali—what is called an *alkaline taste*.

‘I shall not forget *that*, either,’ said Lucy.

‘How wonderful it is,’ continued she—looking first at the sand and ashes, and then at a glass, which she held in her hand—‘how wonderful it is, that such a beautiful, clean, clear, transparent thing as glass, could be made from such different looking things, as sand and ashes!’

‘And I wonder,’ said Harry, ‘how people could ever think or invent, that glass could be made of these things.’

‘Some say that glass was invented, or rather discovered, by a curious accident,’ said his father.

‘Pray, father, tell us the accident.’

‘Some sailors, or some merchants, who were going on a voyage, were driven by contrary winds, out of their *course* (or way.) They were driven close to land, and they were obliged to go on shore—the shore was sandy and there grew near the place where these men landed a great deal of sea-weed. The men wanted to boil some food in an iron pot, which they had brought on shore with them; they made a fire on the sands with sea-weed; and they observed, that the ashes of this sea-weed, mixed with the sand and burnt by the fire, had a glassy appearance. It looked like a kind of greenish glass. It is said, that, from this observation, they formed the first idea of making glass by burning ashes of sea-weed (called *kelp*) and sand together.’

‘How lucky it was, that they made this fire on the sand with sea-weed!’ said Harry.

‘How wise these people were, to observe what happened when they did so!’ said Harry’s father.

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Next morning, when Harry and Lucy went into their father’s room, Harry began with his usual speech—

‘Now for the barometer, father!—and, added he, ‘we must make haste, for we are to go to-morrow to my uncle’s, and I must understand it quite, before I see him again—we must make haste, father.’

‘Let us go on quietly from where we left off yesterday,’ said his father.

‘Yes, about the long pipe,’ said Harry.

‘Pray, father,’ said Lucy, ‘when you were speaking of the water staying in the pipe, why did you say, that the water would be held up, or sustained, by the pressure of the atmosphere, to thirty-three or thirty-four feet high in the tube?—Why should you say thirty-three or thirty-four feet?—Would it not stay either at the one or at the other of these heights?’

‘That is a very sensible question, Lucy,’ said her father. ‘The reason is, that the *pressure of the atmosphere* is not always the same. In fine weather, it is generally greater than when it rains or snows; and before it rains or snows, the *pressure*, or, as it is sometimes called, the *weight* of the atmosphere, is less than at some other times. So that, if we had such a pipe, or tube, and if the upper part of it were transparent, so that we could see into the inside of it, we could tell, by the rising and falling of the water in the pipe, when the air, or atmosphere, was heavier or lighter, and then we might *suppose*, that the weather was going to change. I say *suppose*, because we should not be sure.’

‘Then, father,’ said Harry, ‘if the top of

this pipe were of glass, it would be a barometer, would not it ?

‘ Yes, my dear, it would—Now you know what a barometer is.’

‘ Why do not people make such barometers as this ?’ said Harry.

‘ Because they would be very inconvenient,’ said his father ; ‘ in the first place, it would be difficult to piece them so as that the rise and fall of the water could be easily seen, because you must go up to the top of the house every time you wanted to consult the barometer ; in the next place, the frost would turn the water in the tube into ice ; and there would be an end of the barometer. But the shining liquor, that you saw in your uncle’s barometer, is not liable to freeze.’

‘ That shining liquor,’ said Harry, ‘ is called quicksilver or mercury.’

‘ Yes,’ said his father.—‘ Here is some mercury ; feel the weight of it.’

‘ The quicksilver, that is in this glass, father,’ said Lucy, ‘ seems as heavy as all the water that is in that decanter.’

‘ Yes,’ said her father, ‘ mercury is more than fourteen times heavier than water. Now, Harry, if the pipe, forty feet long, which we were speaking of before, was filled with quicksilver, do you think that the pressure of the atmosphere would hold up the quicksilver thirty-four feet high ?’

‘ Certainly not, father,’ answered Harry ;

‘because the quicksilver is so much heavier than water.’

‘Would it hold it up one quarter the same height?’ said his father.

‘No, it would not,’ answered Harry; ‘because it is easy to perceive that the quicksilver is more than four times heavier than water.’

‘Very true, Harry; it has been found by experiment, that the pressure of the atmosphere will sustain a column of mercury about twenty-nine inches high; sometimes, it will sustain only a column of twenty-seven inches; and sometimes, a column of thirty, more or less, according to the pressure of the atmosphere.’

‘How long is the tube of the barometer?’ said Harry.

‘It is generally about thirty-six inches long; but, as the mercury never rises to the top of the tube, there is always an empty space between the top of the mercury and the top of the glass, which allows the mercury to rise or fall as the pressure of the atmosphere is more or less. The glass tube of a barometer is about one fourteenth part as long as the leaden pipe, which you said would make a water barometer; but the quicksilver is fourteen times as heavy as the water.’

‘All this is rather difficult,’ said Lucy.

‘So it must appear to you at first, my dear,’ said her father; but, when you have seen it often and talked with your brother about it, you will understand it more clearly.’

‘But at least,’ said Lucy, ‘I know now



father, what is meant by *the glass falling* and *rising*. It does not mean that *the glass* falls or rises, but that the mercury rises or falls in the glass.'

'Very true, my dear Lucy; saying, that the glass rises or falls, is an inaccurate mode of speaking. Now, my dear boy, I think you will be able to understand your uncle's barometer, when you see it to-morrow; particularly if you will read, to-night, an excellent description and explanation of the barometer, which you will find in this little book,' said his father, putting 'Scientific Dialogues' into his hands; it was open at the word *barometer*.

'O, thank you, father!' said Harry.

'And, my dear Lucy,' said her father, turning to Lucy, and showing her in a book, which he held in his hand, a print,—'do you know what this is?'

'A thermometer, father — Fahrenheit's thermometer—O, I remember what you told me about Fahrenheit's thermometer.'

'I think you will be able, now, to understand this description of thermometers, my dear; and you may read it whenever you please,' said her father.

'I please to read it this instant, father,' said Lucy.

So Lucy sat down, and read, in the '*Conversations in Chymistry*,' the description of the thermometer; and Harry read the explanation of the barometer, in '*Scientific Dialogues*.' And when they had finished, they

changed books, and Harry read what she had been reading ; and Lucy read what Harry had been reading ; and they liked the books, because they understood what they had read. — ‘ I wonder what the rest of this book is about,’ said Harry, turning over the leaves ; ‘ here are many things I should like to know something about.’

‘ And I should like,’ said Lucy, ‘ to read some more of these conversations between Emma, and Caroline, and Mrs. B—. There seems to be drawings here, and experiments too. Since father has shown us some experiments, I wish to see more.’

‘ But, my dear,’ said her father, ‘ you are not able yet to understand that book. Look at the beginning of it. Read the first sentence.’

‘ *Having now acquired some elementary notions of natural philosophy—*’

‘ What are *elementary notions* ?’ said Lucy, stopping short.

‘ I know,’ said Harry ; ‘ for I heard the writing-master the other day tell my father, that he had given Wilmot, the gardener’s son, some elementary notions of arithmetic, that is, first foundation notions, as it were.’

‘ Then I have no elementary notions of natural philosophy—have I, father ?’ said Lucy.

‘ In the first place, do you know what *natural philosophy* is, my dear ?’ said her father.

Lucy hesitated ; and at last she said, she did not know clearly—she believed, it was something about nature.

Harry said, he believed it meant the knowledge of all natural things—things in nature, such as the air, and the fire, and the water, and the earth, and the trees, and all those things, which we see in the world, and which are not made by the hands of human creatures.

Their father said, that this was partly what was meant.

‘Then,’ said Lucy, ‘I have no *elementary notions of natural philosophy*.

‘Yes, you have,’ said Harry—‘All we have been learning about the air, and the wind, and the pressure of the atmosphere, and all that father has been showing us, about water and quicksilver; these are elementary notions of natural philosophy, are not they, father?’ said Harry.

‘Yes; but you have, as yet, learnt very little,’ said his father; ‘you have a great deal more to learn, before you will be able to understand all that is in these ‘Conversations on Chymistry,’ and in Scientific Dialogues.’

‘Well, father,’ said Harry, smiling, ‘that is what you used to say to me about the barometer; you used to say, a little while ago, that I must know a great deal more, before I could understand the barometer; but now I have learnt all *that*, and now I do understand the barometer; and in time, *I* shall—we shall, I mean—know enough, I dare say, to read these books, and to understand them.

just as well as we now understand the barometer and thermometer.'

'Yes, and very soon too, I dare say!—shall we not, father?' cried Lucy.

'All in good time; we will *make haste slowly*, my dear children,' answered their father. 'Now go get ready, as quickly as you please, to go with your mother and me to your uncle's.'

END OF HARRY AND LUCY.

# FRANK.

BY

MARIA EDGEWORTH.

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COMPLETE IN ONE VOLUME

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BOSTON:  
CROSBY, NICHOLS, LEE AND COMPANY.  
1860.





# FRANK.

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## PART I.

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THERE was a little boy, whose name was Frank. He had a father and mother, who were very kind to him, and he loved them ; he liked to talk to them, and he liked to walk with them, and he liked to be with them. He liked to do what they asked him to do ; and he took care not to do what they desired him not to do. When his father or mother said to him, "Frank, shut the door," he ran, directly, and shut the door. When they said to him, "Frank, do not touch that knife," he took his hands away from the knife, and did not touch it. He was an obedient little boy.

One evening, when his father and mother were drinking tea, he was sitting under the tea-table ; and he took hold of one of the legs of the table, and he tried to pull it towards himself, but he could not move it. He took hold of another leg of the table, and he found that he could not move it ; but at last he took hold of one, which he found that he

could move, very easily ; for this leg turned upon a hinge, and was not fixed like the other legs. As he was drawing this leg of the table towards him, his mother said to him, " Frank, what are you doing ? "

And he answered, " Mamma, I am playing with the leg of the table. "

And his mother said, " What do you mean by saying that you are playing with the leg of the table ? "

And Frank said, " I mean that I am pulling it towards me, mamma. "

And his mother said, " Let it alone, my dear. "

And Frank took his hands away from the leg of the table, and he let it alone ; and he came from under the table ; and he got up, and stood beside his mother ; and he said, " Mamma, I come away from the leg of the table, that I may not think of touching it any more ; " and his father and mother smiled.

And Frank said, " But, mother, will you tell me why you bid me let it alone ? "

" Yes, I will, my dear, " said his mother ; and she then moved some of the tea-cups and saucers to another table ; and Frank's father put the tea-urn upon another table ; and then Frank's mother said to him, " Now, my dear Frank, go and push the leg of the table, as you did before. "

And Frank pushed the leg of the table ;

and when he had pushed it a little way, he stopped, and looked up at his mother, and said, "I see part of the top of the table moving down towards my head, mamma; and if I push this leg any farther back, I am afraid that part of the table will fall down upon my head, and hurt me."

"I will hold up this part of the table, which is called the leaf," said his mother; "and I will not let it fall down upon your head. Pull the leg of the table back, as far as you can." And Frank did as his mother desired him; and when he had pulled it back as far as he could, his mother bid him come from under the table; and he did so; and she said, "Stand beside me, and look what happens when I let go this leaf of the table, which I am now holding."

And Frank said, "I know what will happen, I believe, mamma: it will fall; for now, that I have pulled back the leg, there is nothing to hold it up but your hand."

Then his mother took away her hand, and the leaf of the table fell; and Frank put his hand upon his head, and said, "O, mamma, that would have hurt me very much, if it had fallen upon my head. I am glad I was not under the table when the leaf fell. And now I believe I know the reason, mamma, why you asked me not to meddle with that leg of the table; because the leaf (is not that the name you told me?)—the leaf would have

fallen upon my head, and would have hurt me. Was not that the reason, mamma?"

"That was one reason; but I had some other reasons. Try if you can find out what they were, Frank," said his mother.

And Frank looked at the table for a little while, and then answered, "I don't know any other reasons, mamma;" but, as he was saying these words, he saw his mother turn her head towards the table upon which she had put the cups and saucers.

"O, now, mamma," said Frank, "I know what you mean. If those cups and saucers had been upon this leaf of the table, they would have slid down when it fell, and they would have been broken. And the urn too, mamma, would have come tumbling down; and perhaps the top of the urn would have come off; and then all the hot water would have come running out, and would have wet the room, and would have scalded me, if I had been under it. I am very glad, mamma, that I did as you bid me."

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One day, Frank's mother took him out to walk with her in the fields; and he saw flowers of different colors — blue, red, yellow and purple; and he asked his mother whether he might gather some of these flowers.

She answered, "Yes, my dear, you may gather as many of these flowers as you please."

Then Frank ran, and gathered several flowers ; and in one corner of this field, upon a bank, he saw some blue-bells ; and he liked blue-bells, and he ran and gathered them ; and, in the next field, he saw a great number of purple flowers, which, he thought, looked very pretty ; and he got over the stile, and went into the next field, and went close up to the purple flowers ; they had yellow in the middle of them, and they grew upon a plant which had a great number of green leaves.

As Frank was pulling some of the purple flowers, he shook the green leaves ; and he saw amongst them several little green balls, which looked like very small apples. Frank wished to taste them ; and he was just going to pull one from the stalk, when he recollected that his mother had not given him leave to have them ; and he ran back to his mother, and said, "Mamma, may I have some of those nice little apples ?" and he pointed to the plants on which the purple flowers grew. His mother answered, "I do not see any apples, my dear."

"You will see them, mamma, if you will come a little closer to them," said Frank ; and he took his mother by the hand, and led her to the plants, and showed her the little green balls, which he thought were apples.

"My dear little boy," said his mother, "these are not apples ; these things are not good to be eaten ; they are poisonous ; they

would have made you sick, if you had eaten them."

"I am glad," said Frank, "that I did not taste them. But may I have one of them for a ball?"

"No, my dear," said his mother; "do not meddle with any of them."

Frank walked on, in the path, beside his mother, and he did not meddle with any of the little green balls. And he saw at a little distance from him a boy, who was digging; and when he came near to this boy, Frank saw that he was digging up some of the plants that bore the pretty purple flowers; and Frank said, "Mamma, why does this boy dig up these things? Is he going to throw them away?"

And Frank's mother said, "Look, and you will see what part of them he keeps, and what part of them he throws away."

And Frank looked, and he saw that the boy pulled off the brown and white round roots of the plant, and he put those roots into a basket. The green part of the plant, and the purple flowers, and the green balls, which Frank mistook for apples, he saw that the boy threw away.

And Frank said to his mother, "What are those roots in the basket?"

His mother said, "Look at them, and try if you can find out. You have eaten roots like them; you often see roots like these a dinner."



"I do not remember," said Frank, "ever having seen such dirty things as these at dinner."

"They are washed and boiled before you see them at dinner, and then they look white," said his mother.

Frank looked again at the roots which were in the basket ; and he said, "Mamma, I think that they are potatoes."

"Yes, my dear, they are potatoes," said his mother ; and then Frank and his mother went on a little farther, and they came to a large, shady tree ; and Frank's mother sat down upon a bank under the shade of this tree, to cool and rest herself ; for she was hot and tired. Frank was not tired, therefore he did not sit down ; but he amused himself with trying to reach some of the branches of the tree which hung over his head.

He jumped up as high as he could, to catch them ; but he found that several, which he thought he could reach, he could not touch, even when he stretched out his hand and arm, and stood on tiptoe.

At last he saw a bough which hung lower than the other boughs, and he jumped up and caught hold of it ; and he held it down, that he might look at the leaves of the tree.

"Mamma," said he, "these leaves are not like the leaves of the tree which is near the hall door, at home. You told me the name of that tree ; that tree is called a beech.

"What is the name of this tree?"

"This tree is called a horse-chestnut-tree."

"Mamma," said Frank, "here are little balls upon this tree; they are something like those I saw upon the potatoes. I won't meddle with them; they have prickles upon them."

And Frank's mother said, "You may gather some of these little balls, my dear; these are not of the same sort as those you saw on the potato-plants. These are not poisonous; these are called horse-chestnuts: the prickles are not very sharp; you may break them off."

"How many of these horse-chestnuts may I gather, mamma?" said Frank.

"You may gather four of them, my dear," said his mother; and Frank gathered four of the horse-chestnuts. Then he let go the bough; and he sat down upon the bank, beside his mother, to examine his horse-chestnuts. His mother broke one of them open for him; the inside of the green husk was white and soft, and, in the middle of this white, soft substance, there lay a smooth shining kernel, of the color of mahogany.

"Is it good to eat, mamma?" said Frank. — "May I taste it?"

"You may taste it, if you please, my dear," said his mother; "but I do not think that you will like it, for that brown skin has a bitter taste, and I do not think the inside

of it is agreeable ; but you may taste it, if you like it."

Frank tasted it, and he did not like the bitter of the outside ; and he said, " Mamma, I will always take care to ask you before I meddle with things, or taste them, because you know more than I do, and you can tell me whether they are good for me or not."

Frank's mother, having now rested herself, got up from her seat ; and she walked home ; and Frank carried his three horse-chestnuts home with him. He did not put them into his mouth, because he had learned that they tasted bitter, but he used them as balls ; and he rolled them along the floor, when he got into the house ; and he was very happy playing with them.

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Another day, Frank went out to walk with his mother ; and he came to a gate that was painted green ; and he stopped at the gate, and looked between the rails of it ; and he saw a pretty garden, with several beds of flowers in it ; and there were nice, clean gravel-walks between these flower-beds, and all around the garden. And against the walls of the garden there were plum-trees and cherry-trees ; and the cherries and plums looked as if they were quite ripe.

And Frank called to his mother, who was a little way off ; and he said, " Mamma, come



and look at this pretty garden—I wish I might open this gate, and go in and walk in it.”

“My dear,” said his mother, “you must not open the gate. This garden does not belong to me, and I cannot give you leave to walk in it.”

There was a man nailing up a net over a cherry-tree in this garden, and he came to the gate, and opened it, and said, “Will you walk in, ma’am? This garden belongs to me, and you shall be very welcome to walk in it.” And Frank’s mother thanked the man; and she turned to Frank, and said, “If I take you with me, Frank, to walk in this garden, you must take care not to meddle

with any thing in it." And Frank said that he would not meddle with any thing in the garden ; and his mother took him into it.

As he walked along the gravel-walks, he looked at every thing ; but he did not touch any thing.

A very sweet smell came from two beds of pinks and carnations ; and he stood at a little distance from them, looking at them ; and the man to whom the garden belonged said to him, " Walk down this narrow path, master, between the beds, and you'll see my carnations better."

And Frank answered, " I should like to come down that narrow path, but I am afraid of coming, because the skirts of my coat, I am afraid, will brush against the flowers. I saw your coat, just now, sir, hit against the top of a flower, and it broke it."

Frank's mother smiled, and said, " I am glad, my dear little boy, that you are so careful not to do mischief."

Frank did not tread upon any of the borders ; and the person to whom the garden belonged, who was a gardener, said to his mother, " I hope, whenever you come this way again, ma'am, you'll walk in this garden of mine, and bring this little gentleman with you ; for I am sure, by what I see of him now, that he will not do me any mischief."

The gardener told Frank the names of several flowers ; and he showed him the seeds

of these flowers ; and he showed Frank how these seeds should be sowed in the ground.

And whilst the gardener was showing Frank how to sow the seeds of mignonette, he heard a noise at the gate ; and he looked, and he saw a boy, who was shaking the gate, and trying to get in ; but the gate was locked, and the boy could not open it ; and the boy called to the gardener, and said, " Let me in ; let me in. Won't you let me in ? "

But the gardener answered, " No — I will not let you come in, sir, I assure you ; for when I did let you in, yesterday, you meddled with my flowers, and you ate some of my cherries. I do not choose to let you in here again ; I do not choose to let a dishonest boy into my garden, who meddles with what does not belong to him."

This boy looked very much ashamed, and very sorry, that he might not come into the pretty garden ; and he stood at the gate for some time ; but when he found that the gardener would not let him in, he went slowly away.

A little while afterwards, Frank asked his mother why she did not gather some of the pinks in this garden ; and his mother answered, " Because they are not mine ; and I must not meddle with what does not belong to me."

" I did not know, till now, mamma," said Frank, " that *you* must not meddle with what



does not belong to you. I thought that people only said to little boys, *You must not meddle with what does not belong to you.*"

"My dear," said Frank's mother, "neither women, nor men, nor children, should meddle with what does not belong to them. Little children do not know this, till it is told to them."

"And, mamma," said Frank, "what is the reason that men, women, and children, should not meddle with what does not belong to them?"

Frank's mother answered, "I cannot explain all the reasons to you yet, my dear; but should you like that any body should take flowers out of the little garden you have at home?"

"No, mamma, I should not."

"And did you not see that the boy who just now came to this green gate was prevented by the gardener from coming into this garden, because, yesterday, the boy took flowers and fruit which did not belong to him? *You*, Frank, have not meddled with any of these flowers, or this fruit; and, you know, the gardener said, that he would let you come in here again, whenever I like to bring you with me."

"I am very glad of that, mamma," said Frank; "for I like to walk in this pretty garden; and I will take care not to meddle with any thing that does not belong to me."

Then Frank's mother said, "It is time that we should go home." And Frank thanked the gardener for letting him walk in his garden, and for showing him how to sow seeds in the ground ; and Frank went home with his mother.

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A few days after Frank had been with his mother to walk in the garden that had the green gate, his mother said to him, "Frank, put on your hat, and come with me. I am going to the garden in which we walked two or three days ago."

Frank was very glad to hear this. He put on his hat in an instant, and followed his mother, jumping and singing as he went along.

When he got into the fields which led to the garden with the green gate, Frank ran on before his mother. They came to a stile, upon which a boy, of about Frank's size, was sitting, upon the uppermost step of the stile. He had a hat upon his knees, in which there were some nuts ; and the boy was picking the white kernel of a nut out of its shell.

When the boy saw Frank, he said to him, "Do you want to get over this stile ?"

And Frank answered, "Yes, I do."

The boy then got up from the step of the stile on which he was sitting ; and he jumped

down, and walked on, that he might make room for Frank to get over the stile.

Frank and his mother got over the stile ; and, in the path in the next field, at a little distance from the stile, Frank saw a fine bunch of nuts.

“Mamma,” said Frank, “I think these nuts belong to that little boy who was sitting upon the stile, with nuts in his hat ; perhaps he dropped them, and did not know it. May I pick them up, and run after the little boy, and give them to him ? ”

His mother said, “Yes, my dear ; and I will go back with you to the boy.” So Frank picked up the nuts, and he and his mother went back ; and he called to the little boy, who stopped when he heard him call.

And as soon as Frank got near to him, and as soon as he had breath to speak, Frank said to the boy, “Here are some nuts, which I believe are yours ; I found them in the path, near that stile.”

“Thank you,” said the boy ; “they are mine ; I dropped them there ; and I am much obliged to you for bringing them back to me.”

Frank saw that the boy was glad to have his nuts again ; and Frank was glad that he had found them, and that he had returned them to the person to whom they belonged.

Frank then went on with his mother ; and they came to the garden with the green gate. The gardener was tying the pinks and carna-

tions to white sticks, which he stuck in the ground near them. He did this to prevent the flowers from hanging down in the dirt, and from being broken by the wind.

Frank told his mother that he thought he could tie up some of these flowers, and that he should like to try to do it.

She asked the gardener if he would let Frank try to help him.

The gardener said he would ; and he gave Frank a bundle of sticks, and some strings made of bass mat ; and Frank stuck the sticks in the ground, and tied the pinks and carnations to them ; and he said, "Mamma, I am of some use ;" and he was happy whilst he was employed in this manner.

After the flowers were all tied up, the gardener went to the cherry-tree, which was nailed up against the wall, and he took down the net, which was spread over it.

Frank asked his mother why this net had been spread over it.

She told him that it was to prevent the birds from pecking at and eating the cherries.

The cherries looked very ripe, and the gardener began to gather them.

Frank asked whether he might help him to gather some of the cherries.

His mother said, "Yes ; I think the gardener will trust you to gather his cherries, because he has seen that you have not meddled with any of his things without his leave."

The gardener said that he would trust him ; and Frank was glad ; and he gathered all the cherries that he could reach, that were ripe.

The gardener desired that he would not gather any that were not ripe ; and his mother showed Frank a ripe and an unripe cherry, that he might know the difference between them ; and she asked the gardener if he would let Frank taste these two cherries, that he might know the difference in the taste.

“ If you please, ma'am,” said the gardener ; and Frank tasted the cherries ; and he found that the ripe cherry was sweet, and the unripe cherry was sour.

The gardener told him that the cherries which were now unripe would grow ripe in a few days, if they were left to hang upon the tree, and if the sun shone.

And Frank said, “ Mamma, if you let me come with you here in a few days, I will look at these cherries, that I may see whether they do grow ripe.”

Frank took care to gather only the cherries that were ripe ; and when he had filled the basket into which the gardener asked him to put them, the gardener picked out five or six bunches of the ripest cherries, and he offered them to Frank.

“ May I have them, mamma ? ” said Frank

His mother said, “ Yes, you may, my dear.”

Then he took them ; and he thanked the gardener for giving them to him ; and after

this, he and his mother left the garden, and returned towards home.

He asked his mother to eat some of the cherries, and she took one bunch ; and she said that she liked them.

“ And I will keep another bunch for papa,” said Frank, “ because I know he likes cherries.”

And Frank ate all the rest of the cherries, except the bunch which he kept for his father ; and he said, “ I wish, mother, you would give me a little garden, and some mignonette-seeds, to sow in it.”

She answered, “ This is not the time of year in which mignonette-seeds should be sown. The seeds will not grow, if you sow them now ; we must wait till spring.”

Frank was going to say, “ How many months will it be between this time and spring ? ” but he forgot what he was going to say, because he saw a boy in the field in which they were walking, who had something made of white paper in his hand, which was fluttering in the wind.

“ What is that, mamma ? ” said Frank.

“ It is a paper kite, my dear,” said his mother ; “ you shall see the boy flying this kite, if you please.”

“ I do not know what you mean by flying the kite, mamma,” said Frank.

“ Look at what the boy is doing, and you will see.”



Frank looked ; and he saw the paper kite blown up by the wind ; and it mounted up higher than the trees, and went higher and higher, till it seemed to touch the clouds, and till it appeared no larger than a little black spot ; and at last Frank lost sight of it entirely.

The boy who had been flying the kite now ran up to the place where Frank was standing ; and Frank saw that he was the same boy to whom he had returned the nuts.

The boy held one end of a string in his hand ; and the other end of the string, Frank's mother told him, was fastened to the kite. The boy pulled the string towards him, and wound it up on a bit of wood ; and Frank saw the paper kite again, coming downwards ; and it fell lower, and lower, and lower ; and, at last, it fell to the ground.

The boy to whom it belonged went to fetch it ; and Frank's mother said, " Now we must make haste and go home."

Frank followed his mother, asking her several questions about the kite ; and he did not perceive that he had not his bunch of cherries in his hand, till he was near home. When his mother said, " There is your father coming to meet us," Frank cried, " O mamma, my cherries, the nice bunch of cherries, that I kept to give him — I have dropped them — I have lost them. I am very sorry for it ; may I run back to look for them ? I

think I dropped them whilst I was looking at the kite. May I go back to that field, and look for them ? ”

“ No, my dear,” said his mother ; “ it is just dinner-time.”

Frank was sorry for this ; and he looked back towards the field where he lost his cherries ; and he saw the boy with the kite in his hand, running very fast across the field nearest to him.

“ I think he seems to be running to us, mamma,” said Frank. “ Will you wait one minute ? ”

His mother stopped ; and the boy ran up to them, quite out of breath. He held his kite in one hand, and in the other hand he held Frank’s bunch of cherries.

“ O, my cherries ! thank you for bringing them to me,” said Frank.

“ You seem to be as glad as I was, when you brought me my nuts,” said the boy. “ You dropped the cherries in the field where I was flying my kite. I knew they were yours, because I saw them in your hand, when you were looking at my kite.”

Frank thanked the boy again for returning them to him ; and his mother also said to the boy, “ Thank you, my little honest boy.”

“ I was honest, mamma, when I returned his nuts to him ; and he was honest when he returned my cherries. I liked him for being honest, and he liked me for being honest. I

will always be honest about every thing, as well as about nuts." Then Frank ran to meet his father, with the ripe bunch of cherries, and gave them to him ; and his father liked them very much.

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The evening after Frank had seen the boy flying a kite, he asked his father if he would be so good as to give him a kite.

"My dear," said his father, "I am busy now ; I am writing a letter ; and I cannot think about kites now. Do not talk to me about kites, when I am busy."

When his father had finished writing his letter, he folded it up, and took some sealing-wax to seal it ; and Frank watched the sealing-wax, as it was melted by the heat of the candle. He saw that his father let some of the melted sealing-wax drop upon the paper ; and then he pressed the seal down upon the wax, which had dropped upon the paper, and which was then soft.

When the seal was taken up, Frank saw that there was the figure of the head of a man upon the wax. And he looked at the bottom of the seal ; and he said, "This is the same head that there is upon the wax, only this on the seal goes inwards, and that on the wax comes outwards."

He touched the wax upon which the seal had been pressed ; and he felt that it was now

cold and hard ; and he said, " Papa, are you busy now ? "

And his father said that he was not busy.

And Frank asked him if he would drop some more wax on a bit of paper, and press the seal down upon it.

" Yes," said his father ; " you were not troublesome to me, when I said that I was busy. Now I have leisure to attend to you, my dear."

His father then took out of a drawer three different seals ; and he sealed three different letters with these, and let Frank see him drop the wax upon the paper, and press the seals upon the soft wax.

" Papa, will you give me leave to try if I can do it myself ? " said Frank.

" My dear," said his father, " I will ; but I advise you to take care not to let any of the melted wax drop upon your hands, for it will burn you if you do."

Frank was in a great hurry to melt the wax. His mother called to him, and said, " Gently, Frank, or you will let the wax drop upon your hand, and burn yourself."

But he said, " O, no, mamma ; it will not burn me."

And, just after he had said this, a drop of the melted sealing-wax fell upon the forefinger of his hand, and burned him ; and he squeezed his finger as hard as he could, to try to stop the feeling of pain. " It hurts me very much,

mamma ! I wish I had minded what you said to me ; but I will not cry—I will bear it well.”

“ You do bear it well,” said his father ; “ shake hands with me, with the hand that is not burnt.”

A few minutes afterwards, Frank said that he did not feel the pain any longer ; and he asked his father if he would give him leave to have the sealing-wax again, and try whether he could not make such a seal as he had seen on his father’s letter, without burning himself. “ You did not burn yourself, papa,” said Frank ; “ and if I take care, and do it as you did, I shall not burn myself. May I try again ? ”

“ Yes, my dear,” said his father ; “ and I am glad to see that you wish to *try again*, though you have had a little pain.”

His father showed him, once more, how to hold the wax to the candle, and how to drop it, when melting, upon the paper, without burning himself.

And Frank succeeded very well this time, and made a good seal, and showed it to his mother.

“ Is not it a good seal, mamma ? ” said he. “ I took care not to hold the wax this time as I did the last, when I burned myself.”

“ Yes,” said his mother, “ I dare say you remember how you held it when you burned yourself.”

"O, yes, *that* I do, mamma; the pain makes me remember it, I believe."

"And I dare say you remember how you held the wax, when you made this pretty seal."

"O, yes, mamma, *that* I do; and I shall remember to do it the same way the next time."

"You have been rewarded for your patience, by having succeeded in making this seal; and you were punished for your carelessness, by having burned your forefinger."

Frank remembered that his father desired him not to talk to him about kites when he was busy; and though Frank was very eager to have a kite, he waited till he saw that his father was neither reading nor writing, nor talking to any body. Then he said, "Papa, I believe you are not busy now; will you give me a kite?"

"I have not a kite ready made, in my house," replied his father; "but I will show you how to make one; and I will give you some paper, and some paste, and some wood, to make it of." Then his father gave him three large sheets of paper; and his mother rang the bell, and desired the servant would order the cook to make some paste.

And Frank asked his mother how the cook made paste, and what she would make it of.

His mother took him by the hand, and said, "You shall see;" and she took Frank



down stairs with her, into the kitchen, where he had never been before; and she staid with him whilst he looked at the manner in which the cook made the paste.

"What is that white powder, mamma, which the cook is taking up in her hands?" said Frank.

"It is called flour, my dear. You may take some of it in your hand; and you may taste it."

"What does it come from, mamma?"

"From corn, my dear. You have seen corn growing in the field; and when we walk out again into the field where there is corn, if you will put me in mind, I will show you the part of the plant from which flour is made."

"Made, mamma! how is it made?"

"It is ground in a mill; but I cannot explain to you, now, what I mean by that. When you see a mill, you will know."

"I should like to see a mill," said Frank, "now, this minute."

"But I cannot show it to you, Frank, now, this minute," said his mother; "besides, you came here to see how paste was made; and you had better attend to that now."

Frank attended; and he saw how paste was made. — And when the paste was made, it was left upon a plate to cool.

Frank, as soon as it was cool enough to be used, took it to his father, and asked him if

he might now begin to make his kite ; but his father said, " My dear, I cannot find a slip of wood for you ; and you cannot well make your kite without that ; but I am going to the carpenter's, and I can get such a bit as I want from him. If you wish to come, you may come with me."

Frank said that he should like to go to the carpenter's ; so his father took him along with him.

The carpenter lived in a village which was about a mile from Frank's home ; and the way to it was by the turnpike road.

As he walked along with his father, he saw some men who were lifting up a tree, which they had just cut down. It had been growing in a hedge by the road-side. The men put the tree upon a sort of carriage, and then they dragged the carriage along the road.

" What are they going to do with this tree, papa ? " said Frank. " Will you ask them ? "

The men said that they were carrying the tree to the saw-pit, to have it cut into boards.

They went on a little farther ; and then the men turned up a lane, and dragged the carriage, with the tree upon it, after them ; and Frank told his father that he should like very much to see the saw-pit.

It was not far off ; and his father went down the lane, and showed it to him.

At the saw-pit, Frank observed how the sawyer sawed wood ; he looked at some boards, which had just been sawed asunder. When the sawyer rested himself, Frank looked at the large, sharp teeth of his saw ; and when the sawyer went on with his work, Frank's father asked him to saw slowly ; and Frank observed that the teeth of the saw cut and broke off very small parts of the wood, as the saw was pushed and drawn backwards and forwards. He saw a great deal of yellow dust in the saw-pit, which his father told him was called saw-dust ; and fresh saw-dust fell from the teeth of the saw as it was moved.

The men who had brought the tree to be sawed into boards were all this time busy in cutting off, with a hatchet, the small branches ; and Frank turned to look at what they were doing ; but his father said, " Frank, I cannot wait any longer now ; I have business to do at the carpenter's." So Frank followed his father directly ; and they went on, as fast as they could, to the carpenter's.

When they came to the door of his workshop, they heard the noise of hammering ; and Frank clapped his hands, and said, " I am glad to hear hammering — I shall like to hammer, myself."

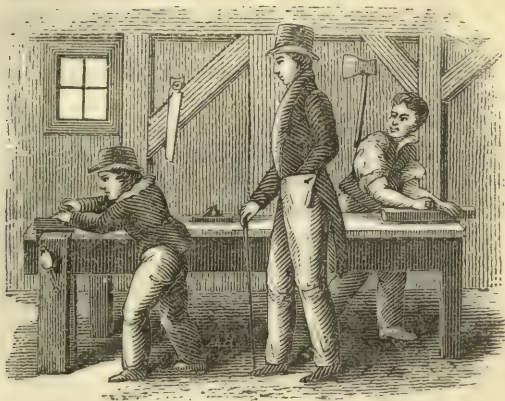
" But," said his father, stopping him, just as he pulled up the latch of the door, " remember that the hammer in this house is not

yours ; and you must not meddle with it, nor with any of the carpenter's tools, without his leave."

"Yes, papa," said Frank, "I know that I must not meddle with things that are not mine. I did not meddle with any of the flowers, or cherries, in the gardener's nice garden ; and I will not meddle with any of the carpenter's tools." So his father took him into the workshop ; and he saw the bench upon which the carpenter worked, which was called a workbench. Upon it he saw several tools — a plane, and a chisel, and a saw, and a gimlet, and a hammer. He did not meddle with any of them ; and after his father had been some time in the workshop, and when he saw that Frank did not touch any of these things, he asked the carpenter to let him touch them, and to show him their use.

The carpenter, who had observed that Frank had not meddled with any of his tools, readily lent them to him to look at, and, when he had looked at them, showed him their use. He planed a little slip of wood with a plane ; and he bored a hole through it with a gimlet ; and he sloped off the end of it with his chisel ; and then he nailed it to another piece of wood with nails, which he struck into the wood with his hammer.

And Frank asked if he might take the hammer and a nail, and hammer it into a bit of wood himself.



“You may try, if the carpenter will give you leave,” said his father.

So Frank took the hammer, and tried to hammer a nail into a bit of wood. He hit his fingers, instead of the nail, two or three times; but at last he drove it into the wood; and he said, “I thought it was much easier to do this, when I saw the carpenter hammering.”

Frank afterwards tried to use the plane, and the saw, which he thought he could manage very easily, but he found that he could not; and he asked his father what was the reason that he could not do all this, as well as the carpenter.

The carpenter smiled, and said, "I have been learning to do all this, master, a great long while. When I first took a plane in my hand, I could not use it better than you do now."

"Then perhaps, papa, I may learn to in time. But, papa," said Frank, recollecting his kite, "will you be so good as to ask for the slip of wood for my kite?"

His father did so; and the carpenter found a slip that was just fit for his purpose, and gave it to him; and his father then desired him not to talk any more; "for," said he, "we have business to do; and you must not interrupt us."

Whilst his father was speaking to the carpenter about his own business, Frank went to the window, to look at it, for it was a different sort of window from those which he had been used to see in his father's house. It opened like a door; and the panes of the glass were very small, and had flat slips of lead all round them.

Whilst Frank was examining this window, he heard the sound of a horse trotting; and he looked out, and he saw a horse upon the road which was before the window.

The horse had a saddle and bridle on, but nobody was riding upon it. It stopped, and ate some grass by the road-side, and then went down a lane.

Soon after Frank had seen the horse go



by, his father, who had finished his business with the carpenter, called to Frank, and told him that he was going home.

Frank thanked the carpenter for letting him look at the plane, and the saw, and the chisel, and for giving him a slip of wood for his kite ; and he took the bit of wood with him, and followed his father. When his father and he had walked a few yards from the carpenter's door, a man passed by them, who seemed very hot, and very much tired. He looked back at Frank's father, and said, "Pray, sir, did you see a horse go by this way, a little while ago ? "

"No, sir, I did not," said Frank's father.

"But I did, papa," said Frank. "I saw a horse going by, upon this road, whilst I was standing, just now, at the carpenter's window."

"Pray, master, what color was the horse you saw ? " said the man.

"Black, sir," said Frank.

"Had he a saddle and a bridle on ? " said the man.

"Yes, sir, he had," answered Frank.

"And pray, master," said the man, "will you be so good as to tell me whether he went on upon this road, straight before us, or whether he turned down this lane to the right, or this other lane to the left hand ? "

As the man spoke, he pointed to the lanes, and Frank answered, "The horse that I saw,

sir, galloped down this lane to my right-hand side."

"Thank you, master," said the man. "I will go after him; I hope the people at the house, yonder, will stop him. He is as quiet and good a horse as can be, only that, whenever I leave him by the road-side, without tying him fast by the bridle, he is apt to stray away; and that is what he has done now."

The man, after saying this, went down the lane to his right-hand side; and Frank walked on, with his father.

The road towards home was up a steep hill, and Frank began to be tired before he had got half way up the hill.

"It did not tire me so much, papa, as we came down the hill; but it is very difficult to get up it again."

"I do not hear all that you are saying," said his father, "you are so far behind me. Cannot you keep up with me?"

"No, papa," cried Frank, as loud as he could, "because I am tired. My knees are very much tired, coming up this great hill."

His father stopped and looked back, and saw that Frank was trying to come up the hill as fast as he could.

At this time Frank heard the noise of a horse behind him; and he looked, and saw the man whom he had spoken to a little while before, riding upon the black horse, which he had seen going down the lane.

The man said to him, "Thank you, master, for telling me which way my horse went. You see I have got him again ; you seem sadly tired ; I will carry you up this hill upon my horse, if you have a mind."

"I will ask my father if he likes it," said Frank.

His father said, "Yes, if you please ;" and the man took Frank up, and set him before him, upon the horse, and put his arm round Frank's body, to hold him fast upon the horse. Then the horse walked gently up the hill, and Frank's father walked beside him. And when they came to the top of the steep hill, his father took Frank down from the horse, and he thanked the man for carrying him ; and he felt rested, and able to walk on merrily with his father.

And as they walked on, he said to his father, "I am glad that I saw the horse, and observed which way it went, and that I told the man which road it went. You know, papa, there were three roads ; and the man could not know which way the horse went, till I told him. If I had not told him the right road, he would have gone on — on — on, a great way ; and he would have tired himself ; and he would not have found his horse. It would have been very foolish and ill-natured of me to have done that."

"Yes, it would," said his father ; "that would have been telling what was not the

truth. Now you have seen one of the uses of telling the truth."

"*One* of the uses, papa ! Are there more uses, papa ?"

"Yes, a great many."

"Will you tell them all to me ?"

"I would rather that you should find them out for yourself," said his father ; "you will find them all out some time or other."

Then Frank began to talk about his kite ; and as soon as he got home, his father showed him how to make it, and helped him to do it. And when it was made, he left it to dry ; for the paste, which pasted the paper together, was wet ; and his father told him that it must dry before the paste would hold the paper together, and before the kite was fit to be used.

Frank left it to dry ; and when it was quite dry, his father told him that he might go out on the grass, in a field near the house, and fly it.

Frank did so ; and it went up very high in the air ; and it staid up, now higher, now lower, for some time ; and the sun shone upon it, so that it was plainly seen ; and the wind swelled out the sides of it, as Frank pulled it by the middle with the string.

His mother came to the window, to look at the kite ; and Frank was glad that she saw it, too ; and, when it came down, it fell upon the smooth grass, and it was not torn. Frank carried it into the house, and put it by care-



fully, that it might not be spoiled, and that he might have the pleasure of flying it another day ; and he said, “ I wish I could find out why the kite goes up ! ”

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It was a rainy day, and Frank could not go out to fly his kite ; he amused himself with playing with his horse-chestnuts. He was playing in a room by himself ; and, by accident, he threw one of his horse-chestnuts against the window, and it broke a pane of glass. Immediately he ran down stairs, into the room where he knew his mother was, and went up to her. She was speaking to some-

body, and did not see him ; and he laid his hand upon her arm, to make her attend to him ; and the moment she turned her face to him, he said, "Mamma, I have broken the window in your bed-chamber, by throwing a horse-chestnut against it."

His mother said, "I am very sorry you have broken my window ; but I am glad, my dear Frank, that you came directly to tell me of it." And his mother kissed him.

"But how shall I prevent you," said she, "from breaking my window again, with your horse-chestnut ?"

"I will take care not to break it again, mamma," said Frank. "But you said that you would take care before you broke it to-day ; and yet you see that you have broken it. After you burnt your finger, by letting the hot sealing-wax drop upon it, you took a great deal of care not to do the same thing again ; did not you ?"

"O, yes, mamma," said Frank, squeezing the finger which he burnt, just as he did at the time he burnt it. "O, yes, mamma, I took a great deal of care not to do the same thing again, for fear of burning myself again."

"And if you had felt some pain when you broke the window, just now, do you not think that you should take care not to do so again ?"

"Yes, mamma."

"Where is the horse-chestnut with which you broke the window ?"



"It is lying upon the floor in your room."

"Go and fetch it."

Frank went for it, and brought it to his mother ; and she took it in her hand, and said, " You would be sorry to see this horse-chestnut thrown away ; would not you ? "

" Yes, mamma," said Frank ; " for I like to roll it about, and to play with it ; and it is the only one of my horse-chestnuts that I have left."

" But," said his mother, " I am afraid that you will break another of my windows with it ; and if you would throw it away, you could not break them with it ; and the pain you would feel, at your horse-chestnut's being thrown away, would make you remember, I think, not to throw hard things against glass windows again."

Frank stood for a little while, looking at his horse-chestnut ; and then he said, " Well, mamma, I will throw it away ; " and he threw it out of the window.

Some days afterwards, his mother called Frank to the table where she was at work ; and she took out of her work-basket two leather balls, and gave them to Frank ; one of them was very hard, and the other was very soft.

His mother desired that he would play with the soft ball when he was in the house, and with the hard ball when he was out of doors. She said that she had made the soft ball on

purpose for him, that he might have one to play with when it was rainy weather, and when he could not go out.

This soft ball was stuffed with horse-hair; it was not stuffed tight; Frank could squeeze it together with his fingers; and his mother threw it against the window, and it bounded back without breaking the glass.

Frank thanked his mother; and he liked the two balls very much. And his mother said to him, "You have not broken any more windows, Frank, since you *punished* yourself by throwing away your horse-chestnut; and now I am glad to *reward* you for your truth and good sense."

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About a week after Frank's mother had given him the two balls, she came into the room where he had been playing at ball. Nobody had been in the room with him till his mother came in; she had a large nose-gay of pinks and carnations in her hand — "Look here, Frank," said she; "the gardener, who lives at the garden with the green gate, has brought these pinks and carnations, and has given them to me; he says they are some of those which you helped him to tie up."

"O, they are very pretty! they are very sweet!" said Frank, smelling to them, as his mother held them towards him. "May I

help you, mamma, to put them into the flower-pot ? ”

“ Yes, my dear ; bring the flower-pot to me, which stands on that little table, and we will put these flowers into it.”

She sat down ; and Frank ran to the little table for the flower-pot.

“ There is no water in it, mamma,” said Frank.

“ But we can put some in,” said his mother — “ Well ! why do not you bring it to me ? ”

“ Mamma,” said Frank, “ I am afraid to take it up, for here is a great large crack all down the flower-pot ; and when I touched it, just now, it shook. It seems quite loose ; and I think it will fall to pieces, if I take it in my hands.”

His mother then came to the little table, by which Frank was standing ; and she looked at the flower-pot, and saw that it was cracked through, from top to bottom ; and the moment she took it in her hands, it fell to pieces.

“ This flower-pot was not broken yesterday evening,” said his mother ; “ I remember seeing it without any crack in it yesterday evening, when I took the dead mignonette out of it.”

“ So do I, mamma ; I was by at that time.”

“ I do not ask you, my dear Frank,” said his mother, “ whether you broke this flower-pot ; I think, if you had broken it, you would

come and tell me, as you did when you broke the pane of glass in this window."

"But, mamma," said Frank, eagerly looking up in his mother's face, "I did not break this flower-pot; I have not meddled with it; I have been playing with my soft ball, as you desired; look, here is my soft ball," said he; "this is what I have been playing with, all this morning."

"My dear Frank," said his mother, "I believe you. You told me truth before, about the window that you broke."

Frank's father came into the room at this moment; and Frank asked him if he had broken or cracked the flower-pot.

He said, "No, I have not; I know nothing about it."

Frank's mother rang the bell, and, when the maid-servant came up, asked the maid whether she had cracked the flower-pot.

The maid answered, "No, madam, I did not." And after she had given this answer, the maid left the room.

"Now, my dear Frank," said his father, "you see what an advantage it is to speak the truth; because I know that you told the truth about the window which you broke, and about the horse which you said you had seen going down the lane, I cannot help believing that you speak the truth now. I believe that you did not break this flower-pot, because you say that you did not."

"But, papa," said Frank, "I wish that the person who *did* crack it would tell you, or mamma, that they cracked it, because then you would be *quite* sure that I did not do it. Do you think the maid did it?"

"No, I do not; because she says she did not; and I have always found that she tells the truth."

Frank's mother, whilst he was speaking, was looking at the broken pieces of the flower-pot; and she observed that, near the place where it was cracked, one side of the flower-pot was blackened; and she rubbed the black, and it came off easily; and she said, "This looks as if it had been smoked."

"But smoke comes from the fire," said Frank; "and there has been no fire in this room, mamma."

"And did you never see smoke come from any thing but from the fire in the fire-place?"

"Not that I remember, mamma," said Frank — "O yes, I have seen smoke, a great deal of smoke, come from the spout of the tea-kettle, and from the top of the urn."

"That is not smoke," said his father; "but I will tell you more about that another time. Cannot you recollect seeing smoke come from ——"

"From what, papa?"

"Last night you saw smoke coming from ——"

"O, now I recollect—from the candle, papa," said Frank.

"And now I recollect," said Frank's father, "that, late last night, I was sealing a letter at this little table; and I remember that I left the green wax candle burning very near this flower-pot, whilst I went out of the room, to give the letter, which I had been sealing, to a man who was waiting for it. When I came back again, I put out the candle; I did not observe that the flower-pot was smoked, or cracked; but I now think it is very probable that the heat of that candle cracked it."

"Let us look whether there is any melted green wax," said Frank, "upon the pieces of the flower-pot; because wax, when it was melting, might drop upon the flower-pot, as it did upon my fingers once."

Frank examined all the pieces of the flower-pot, and on one bit, near the place where it was blackened with smoke, he found a round spot of green wax.

"Then," said his father, "I am now pretty sure that it was I who was the cause of cracking the flower-pot, by putting the lighted candle too near it."

"I am very glad we have found out the truth," said Frank; "and now, papa," added he, "will you be so good as to tell me about the smoke—no, not the smoke, but the thing that looks so like smoke, which



comes out of the top of the urn, and out of the spout of the tea-kettle?"

"I have not time to explain it to you now, Frank," said his father; "but if I am not busy at tea-time, this evening, you may put me in mind of it again." — And at tea-time his father showed him the difference between smoke and steam.

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"The bread, mamma, is very good this morning," said Frank, one morning at breakfast.

"It is new bread."

"New bread, mamma! What is meant by *new* bread?"

"Bread that has been newly made."

"Bread is made of flour, I remember you told me, mamma, and flour comes from — O mamma, do not you recollect telling me that, some time or other, you would show me corn growing in the fields? When we walk out this morning, I will put you in mind of it again."

And when he walked out with his mother in the fields, Frank put her in mind of it again; and she said, "I see some men at work, yonder, in a cornfield; let us go and see what they are doing." So they went to the field; and Frank's mother showed him some corn growing; and she showed him some that had been cut down; she showed him some that was ripe, and some that was



not ripe. And then they walked farther on, to the part of the field where the men were at work.

Frank saw that they had a kind of sharp, bright hooks in their hands, with which they were cutting down the corn. His mother told him that these hooks are called reaping-hooks, or sickles.

He saw that, after the corn was cut down, the men tied up bundles of it, which they set upright in the field, at regular distances from each other. His mother told him that each of these bundles was called a sheaf of corn; and she pulled out a single stalk, and put it into his hand, and said, "This is called an

ear of corn ; what grows upon a single stalk is called an ear of corn."

Whilst Frank was looking at the men tying up the sheaves of corn, a person came up to him, and said, " You are welcome, here, master —— You are he that was so good as to tell me which road my horse strayed some time ago."

Frank looked in the face of the person who was speaking to him ; and he recollected this to be the man who carried him up the steep hill, upon his horse.

This man was a farmer ; and he was now overlooking some laborers, who were reaping his corn. He pointed to a small house, amongst some trees at a little distance ; and he told Frank's mother that he lived in that house ; and that, if she would like to walk there, he could show Frank how the men were threshing some corn in his barn.

Frank's mother thanked the farmer ; and they walked to his house. It was a thatched, whitewashed house, and it looked very neat. There were some scarlet flowers in the kitchen garden, which looked very pretty. As they passed through the garden, Frank asked the name of these flowers ; and his mother told him that these were called scarlet runners ; and she said to him, " On this kind of plant grow kidney beans, of which you are so fond, Frank."

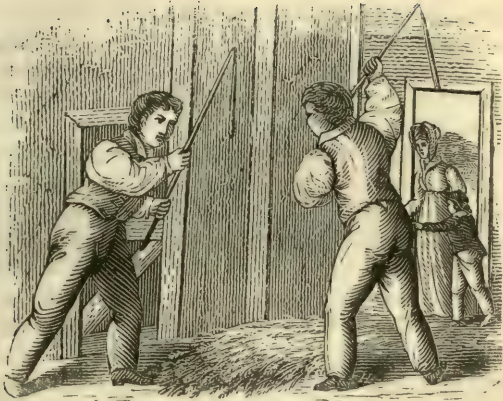
Frank saw cabbages, and cauliflowers, and



lettuce, in this garden ; but his mother said, " Come, Frank, you must not keep us waiting ; " and he followed his mother through a yard, where there were a great number of ducks, and fowl, and geese, and turkeys ; and they made a great noise ; and several of them clapped their white wings ; and the geese and turkeys stretched out their long necks.

" You need not squeeze my hand so tight, Frank," said his mother ; " you need not squeeze yourself up so close to me ; these geese and turkeys will not do you any harm, though they make so much noise."

So Frank walked on stoutly ; and he found that the geese and turkeys did not hurt



him ; and when he had crossed this yard, the farmer led them through a gate, into a large yard, where there were ricks of hay ; and there were several cows in this yard ; and, as he passed by them, Frank observed that their breath smelt very sweet.

“ Come this way, into the barn,” said the farmer ; “ here are the men who are threshing.”

The barn, on the inside, looked like a large room, with rough walls, and no ceiling ; but it had a floor. Two men were at work in this barn ; they were beating some corn, that lay upon the floor, with long sticks ; they made a great noise, as they struck the floor with their sticks ; so that Frank could neither

make his mother hear what he said, nor could he hear her voice.

The sticks seemed to be half broken in two, in the middle ; and they seemed to swing with great violence, as the men struck with them ; and Frank was afraid that the sticks should reach to where he stood, and would hit him ; but, after he had been in the barn for a little while, he became less afraid ; he observed that the sticks did not swing within reach of him.

The farmer asked the men to stop working ; and they stopped ; and the farmer took one of the things, with which they had been working, out of their hands, and showed it to Frank.

His mother told him that it was called a flail. It was made of two sticks, tied together with a bit of leather.

The farmer showed Frank the corn, which lay upon the floor ; and his mother showed him, that the loose, outside cover of the corn, was beaten off by the strokes of the flail.

The farmer said, " You may take some of the corn, master, in your hand ; and some of the chaff ; and then you will see the difference."

The chaff was the outside covering.

" And how is this corn made into bread ? " said Frank.

" O, master," said the farmer, " a great deal must be done to it, before it is made into bread. It must go to the mill, to be ground."



"I should like to see the mill, mamma," said Frank; "but I do not know what he means by *to be ground*."

"That you will see, when you go to the mill."

"Shall we go to the mill now, mamma?" said Frank.

"No, my dear," said his mother; "I would rather that you should wait till some day when your father can have time to go with you to the mill; because he can explain it to you much better than I could."

Then Frank and his mother thanked the farmer for what he had shown them; and they had a pleasant walk home.

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"Ah, spare yon emmet, rich in hoarded grain:  
He lives with pleasure, and he dies with pain." \*

Frank was always careful not to hurt insects, nor any sort of animals. He liked to observe spiders in their webs, and ants carrying their white loads, but he never teased them; even those animals which he did not think were pretty, he took care not to hurt.

One evening, when he was walking with his father and mother upon a gravel-walk near the house, he saw several black snails. He did not think them pretty animals, but, whenever he came near one, he took care not to tread upon it. He stooped down to look

at one of these black snails, which was drawing in its black horns.

"I believe, mamma," said Frank, "that it drew in those horns, because he is afraid I am going to hurt him."

"Very likely."

"But that is foolish of the snail, mamma, because you know I am not going to hurt it."

"I know that, Frank; but how should the snail know it?"

"He lies quite still; he will not put out his black horns again; I will go away and leave him, that I may not frighten him any more. I should not like to be frightened myself, if I was a snail," said Frank. So he ran on, before his father and mother, and left the snail; and he saw some pretty brown and green moss upon a bank; and he asked his mother if he might gather some of it.

She said, "Yes;" and he climbed up the bank; and he gathered some of the moss; and in the moss, at the foot of a tree, he found a pretty shell. It was striped with purple, and green, and straw color, and white; and it was smooth, and very shining. He got down from the bank, as fast as he could; and he ran, and asked his mother if he might keep this pretty shell, and carry it into the house, when he came home from walking.

His mother looked at the shell, as Frank held it upon the palm of his hand; and she told him that he might have it; and that he

might carry it into the house with him, when he went home ; and she told him that it was a snail-shell.

“ A snail-shell, mamma ! ” said Frank. “ I never saw such a pretty snail-shell before ; I am glad I have found it ; and I will take care not to break it.”

Frank held it carefully in his hand, during the rest of his walk ; and he often looked at it, to see that it was safe ; and just as he came near the hall door, he opened his hand, and began to count the number of colored rings upon his snail-shell. “ One, two, three, four, five rings, mamma,” said Frank ; “ and the rings seem to wind round and round the shell. They are larger at the bottom ; and they grow less and less, as they wind up to the top.”

“ That is called a spiral line,” said his father, pointing to the line which, as Frank said, seemed to wind round and round the shell.

As Frank was looking with attention at the shell, he felt something cold, clammy, and disagreeable touching his hand, at the bottom of the shell ; and with his other hand he was going to lift up the shell, to see what this was ; but when he touched it, he found that it stuck to his hand ; and, a few instants afterwards, he saw the snail-shell seemed to rise up ; and he perceived the horns and head of a snail, peeping out from beneath the shell.

"O, mamma! there is a living snail in this shell. Look at it," said Frank. "Look! it has crawled out a great deal farther now; and it carries its shell upon its back. It is very curious; but I wish it was crawling any where but upon my hand; for I do not like the cold, sticky feeling of it."

Frank was then going to shake the snail from his hand; but he recollected that, if he let it fall suddenly upon the stone steps, he might hurt the animal, or break the pretty shell; therefore he did not shake it off; but he put his hand down, gently, to the stone step; and the snail crawled off his hand, upon the stone.

"Mamma," said Frank, "I think the snail might do without that pretty shell; you gave the shell to me, mamma. May I pull it off the snail's back?"

"My dear," said his mother, "I did not know that there was a snail in that shell, when I said that you might have it. I would not have given it to you, if I had known that there was a snail withinside of it. You cannot pull the shell from the snail's back, without hurting the animal, or breaking the shell."

"I do not wish to hurt the animal," said Frank; "and I am sure I do not wish to break the pretty shell; so I will not pull it. But, mamma, I think I had better take the snail and snail-shell, both together, into the

house, and keep them in my little red box, mamma ; what do you think ? ”

“ I think, my dear, that the snail would not be so happy in your little red box as it would be in the open air, upon the grass, or upon the leaves which it usually eats.”

“ But, mamma, I would give it leaves to eat in the little red box.”

“ But, Frank, you do not know what leaves it likes best to eat ; and if you do not shut it up in your red box, it will find the leaves for itself which it loves best.”

“ Then, if you do not think it would be happy in my red box, mamma, I will not shut it up in it ; I will leave it to go where it pleases, with its own pretty shell upon its back. That is what I should like, if I was a snail, I believe.”

He then took the snail, and put it upon the grass, and left it ; and he went into the house with his mother, and she called him into her room ; and she took out of her bureau something which she held to Frank’s ear, and he heard a noise like the sound of water boiling ; then she put into Frank’s hand what she had held to his ear ; and he saw that it was a large shell, speckled red, and brown, and white ; it was so large, that his little fingers could hardly grasp it.

“ Do you like it as well as you did the snail-shell ? ”

“ O, yes, a great deal better, mamma.”

“Then I give it to you, my dear,” said his mother.

“Keep it,” said his father; “and, even if you keep it till you are as old as I am, you will feel pleasure when you look at it; for you will recollect that your mother was pleased with you when she gave it to you, because you had been good-natured to a poor little snail.”



# FRANK.

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## PART II.

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“WHAT was it, mamma,” said Frank, “that papa was saying to you, just after you were looking at the snail?”

“I do not recollect, my dear.”

“I wish you could be so good as to try to recollect, mamma, because it sounded very pretty; and I should like to hear it again. It seemed like something out of a book; it was something about horned snails, and varnished shells, and sliding——”

“Do you mean,

‘Slide here, ye horned snails with varnished shells’?”

“O, yes, mamma!” cried Frank, “that is what I mean; but papa said a great deal more of it. Will you say it for me?”

“I will repeat the lines, that you may hear the agreeable sound, but I do not think that you can understand the sense of them yet,” said his mother; and she repeated to him the following lines:—

“‘Stay thy soft, murmuring waters, gentle rill;  
Hush, whispering winds; ye rustling leaves, be still

Rest, silver butterflies, your quivering wings ;  
Alight, ye beetles, from your airy rings ;  
Ye painted moths, your gold-eyed plumage furl,  
Bow your wide horns, your spiral trunks uncurl ;  
Glitter, ye glowworms, on your mossy beds ;  
Descend, ye spiders, on your lengthened threads ;  
Slide here, ye horned snails with varnished shells ;  
Ye bee-nymphs, listen in your waxen cells.' "

" I do not understand the last line, mamma, at all ; but I understand about the spiders coming down on their long threads ; I have often looked at spiders doing that. But, mamma, I never saw any moths that had trunks ; I do not think that a moth could carry a trunk."

" What do you think is meant by a trunk, my dear ? "

" A sort of box."

" That is one meaning of the word *trunk*. Do you know any other meaning ? "

" Yes ; a trunk of a tree."

" And did you never see the picture of the trunk of an elephant ? "

" Yes, yes, mamma, I remember seeing that ; and I remember you read to me an account of the elephant ; and you told me he could curl up that trunk of his. But, mamma, such moths as I have seen are little flying animals, about as large as a butterfly ; they could not have such trunks as elephants have."

" No, they have not ; they have not such large trunks."

" Will you tell me what sort of trunks they have ? "

"I will show you, the first time we see a moth."

"Thank you, mamma; and I wish you could show me a glowworm. I have seen a beetle; but, mamma, will you say that part about the beetle again?"

"Alight, ye beetles, from your airy rings."

"What does that mean, mamma?"

"Beetles sometimes fly round and round in the air, so as to make the shape of circles or rings in the air; and *alight*, here, means, come down from—alight or settle upon the ground."

"And *silver butterflies*, mamma, does not mean, made of silver, but that they look shining, like silver; does not it?"

"Yes, my dear."

"But I wish very much, mamma, to see the glowworms that lie on the mossy beds."

"I will try if I can find a glowworm, and show it to you this evening," said his mother.

In the evening, when it was dusk, Frank's mother called him, and bid him follow her; and she went down a lane that was near her house; and Frank followed her. She looked from side to side, on the banks, and under the hedges, as she walked along.

"Are you looking for a glowworm, mamma?" said Frank. "It is so dark, now, that I am afraid we shall not see it, unless it is a great deal larger than a common worm, or

unless we had a lantern. May I go back for the little lantern that is in the hall? There is a candle ready lighted in it, mamma. May I go back for it, mamma?"

"No, my dear; we shall not want a lantern, nor a candle. We shall be more likely to find a glowworm in the dark than if we had a candle."

Frank was surprised at hearing his mother say this. "I can always find things better in the light than in the dark," said he. But, just as he finished speaking, he saw a light upon the bank, near the place where his mother was standing; and she called to him, and said, "Here is a glowworm, Frank; come nearer to me, and you will see it better."

Frank kneeled down upon the bank, beside his mother; and saw that the light seemed to come from the tail of a little brown caterpillar.

The caterpillar crawled on, upon the bank; and the light moved on whenever the caterpillar moved, and stood still whenever it stood still.

Frank's mother, whilst the glowworm was standing still, put her hand down upon the bank, close beside it; and, by and by, the glowworm began to move again, and it crawled upon her hand.

"O mamma! take care," cried Frank. "It will burn you."

"No, my dear, it will not burn me; it will

not hurt me," said his mother ; and she held her hand towards Frank ; and he saw the glowworm upon it.

"Shall I put it in your hand?" said his mother. Frank drew back, as if he was still a little afraid that it should burn him.

"My dear," said his mother, "it will not hurt you. You know that I would not tell you that it would not hurt you if it would. You know that I told you the hot, melting sealing-wax would scald you, if you let it drop upon your fingers; and it did. But I tell you that the light, which you see about this animal, will not burn you, as the flame of a candle or as the fire would."

"Then, here is my hand, mamma. Put the glowworm upon it; and I will not shrink back again," said Frank.

He found that the light from the glowworm did not hurt him, in the least; and he asked his mother how it came that this, which looked so much like the flame of a candle, should not burn him. But she answered, "I cannot explain that to you, my dear." And when Frank had looked at the glowworm as long as he liked to do so, his mother desired him to put it again on the bank; and he did so; and, before they got home, Frank saw several other glowworms upon the banks; and his mother said to him, "Now you know the meaning of

'Glitter, ye glowworms, on your mossy beds.'

"Yes," said Frank; "*glitter* means, look bright, shine. Thank you, mamma, for showing me these glowworms; and, some time or other, I hope we shall see the trunk of a moth."

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The candles were lighted; and all the window-shutters in the room were shut, except the shutters of one window, which was left open to let in the air; for it was a warm evening.

Frank's mother was sitting upon a sofa, reading; and Frank was kneeling upon a chair, at the table upon which the candle stood. He was looking at some prints in a book which his mother had lent to him.

Through the window, which was open, there flew into the room a large moth. It flew towards the candle.

"O mamma! here is a moth," cried Frank.

As he spoke, the moth, which had flown very quickly round and round the candle two or three times, went so close to the flame, that Frank thought it would burn itself to death; and he cried, "O, it will burn itself." And he put his hand before his eyes, that he might not see the moth burn itself. But his mother did not put her hands before her eyes; she got up as quickly as possible, and put her hand gently over the moth, and caught it; and so prevented it from burning itself in the candle.



"I am glad you have caught it, mamma," said Frank; "and the next time I will try to catch it, as you did; and I will not put my hands before my eyes, because that did the moth no good."

His mother then covered the moth with a glass tumbler; and she put it upon the table; and Frank looked through the glass; and he saw it plainly.

When the moth was quiet, Frank's mother took a honey-suckle out of her nosegay; and she lifted up one side of the tumbler, a little way from the table; and she squeezed the honey-suckle under the tumbler; and as soon as the moth perceived the flower was near him, he walked upon it; and Frank saw him uncurl what is called his trunk, or proboscis; and he saw the moth dip it into part of the flower of the honey-suckle. And he saw also what were called the horns of the moth; and he saw the animal bow them forwards; and he said, "Now, mamma, will you repeat those two lines about the moth again for me?"

"Ye painted moths, your gold-eyed plumage furl;  
Bow your wide horns, your spiral trunks uncurl."

"*Painted!*" said Frank; "it does not mean that the moth is painted, I suppose, but that it looks as if it was painted. *Gold-eyed plumage*, mamma! What does that mean?"

"*Plumage* means feathers, such as you see on birds. Look through this glass," said his mother, putting a magnifying-glass into his hand.

"I have looked through this glass before, at a caterpillar, mamma ; it makes things look larger."

His mother lifted up the tumbler, gently ; and, as the moth was settled upon the honey-suckle, Frank looked through the magnifying-glass at it.

"Mamma, it looks very large ; and upon its wings," said Frank, "I see what look like very, very small feathers."

"That is what is meant by *plumage*."

"But *gold-eyed*, mamma ! I see no gold eyes."

"Do you see some spots upon the wings?"

"Dark-brown spots, mamma ?"

"Yes."

"They are of the shape of eyes ; and, though they are not eyes, they are called so, from their shape. In some moths, those spots are yellow, gold-colored ; and then they may be called *gold-eyed*."

"One thing more, mamma," said Frank.

"What does it mean by — Would you be so good as to say the last line again ? for I do not recollect the word that I did not understand."

His mother repeated the line again —

"'Ye painted moths, your gold-eyed plumage furl.'"

"*Furl*, mamma ; furl is the word that I do not understand." His mother showed him a fan, and showed him what is meant by to

*furl*, and to *unfurl*, a fan ; and when the moth closed, and afterwards spread, its wings, she said, " Now he is furling, and now he is unfurling, his pretty wings. And now I think we have kept him long enough under this glass ; we will now let him fly about where he pleases." So she took the moth, and let him fly out of the window.

" Do you know, mamma," said Frank, " that I can repeat those two lines about the moths ? I wish you would say the other lines again for me, that I might learn them all, and then say them to my father. I think he would like to hear me say them, after dinner, to-morrow, mamma."

" I think your father will like to hear you repeat them, if you understand them all ; but not otherwise."

" I think I do understand them all — every one — now, mamma, except something in the last line about bees in their waxen cells."

" You never saw a honey-comb, did you, Frank ? "

" No, mamma, never."

" When you see a honey-comb, you will know what is meant by the waxen cells in which bees live."

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The next morning at breakfast, there was part of a honey-comb upon a plate, on the breakfast-table ; and Frank's mother showed

it to him ; and she gave him some honey. He liked the sweet taste of the honey ; and he thought the honey-comb was very pretty.

His mother gave him a little bit of the honey-comb, which she told him was made of wax.

“ It is quite a different sort of wax from sealing-wax, mamma,” said Frank. “ Where does this wax come from ; and this pretty honey-comb, and this sweet honey ? ”

His mother told him that she would show him where they all came from, when she had finished eating her breakfast. And, after breakfast was over, she took Frank with her to a cottage, belonging to an old woman in the neighborhood.

The old woman was sitting at her door, turning a small wheel very quickly round, which Frank’s mother told him was called a spinning-wheel.

The old woman pushed her spinning-wheel on one side, and got up, as soon as they came to her door.

“ Thank you for the good honey you sent us, Mrs. Wheeler,” said Frank’s mother.

“ You are heartily welcome, ma’am, I am sure,” said the old woman ; “ but it was not I that sent it ; it was my grandson sent it to you —— George ! George ! are you there ? ”

A little boy came running to the door ; and he smiled when he saw Frank ; and Frank smiled when he saw him ; for he recollected



that this was the same boy to whom he had returned the nuts which he had found dropped near the stile — the same boy who had brought him back his ripe bunch of cherries.

“Thank you for the honey you sent us,” said Frank’s mother to this boy; “will you be so good as to let us look at your bee-hive? I hear that you have a glass bee-hive.”

“Yes, ma’am, I have,” said the boy; “and if you will be pleased to come with me into the garden, I will show it to you. I have a glass bee-hive and a straw bee-hive.”

Frank and his mother followed the boy.



who ran across a narrow passage, which went straight through the house ; and he opened a low gate, and took them into a small garden.

The paths were narrow ; and he said to Frank, " Take care that you do not prick yourself against the gooseberry-bushes, as I do, when I am in a hurry to get by."

Frank took care not to prick himself ; and the boy pointed to his bee-hives, and said, " There are my bee-hives ; and there are my bees."

" Did bees make that straw basket ? " said Frank.



The boy laughed so much at this question that he could make no answer; but Frank's mother answered, "No, my dear; the bees did not make that straw basket; that was made by men; but go and look in, through the little pane of glass in that wooden box, and you will see what bees make."

"Do not you know," said the little boy, "what bees make? I thought that every body knew that bees make honey and wax."

"How can they make honey? What do they make it of?" said Frank.

"They collect it; they get it from flowers," answered his mother: and she said to the boy, "May I gather this honey-suckle?" touching a honey-suckle which grew in an arbor, close beside the place where she stood.

"Yes, and welcome, ma'am," said the boy; "that honey-suckle is mine; grandmother gave it to me."

When Frank's mother had gathered the honey-suckle, she pulled off a part of the flower; and she held that end of the flower which grew next the stalk to Frank's mouth; and she bid him suck it.

He sucked it.

"It has a sweet taste, like honey," said Frank. "Is that the reason the flower is called honey-suckle, mamma?"

"Yes, my dear, I believe it is."

"And have all flowers honey in them mamma?"

"I do not know, my dear; but I know that some flowers have more honey in them than others."

"And how do bees get honey from flowers?"

"Look, and you may see a bee now settling upon that honey-suckle in the arbor; you will see all that I have seen, if you use your own little eyes."

Frank used his own little eyes; and he saw that the bee stretched out its proboscis, or trunk, and put it down into the flower; then drew it back again, and flew to another part of the flower; settled again, and again put down its proboscis; drew it back, and put it to its mouth.

"I fancy, mamma, the bee sucks the honey which it gets in the flower, from its proboscis, every time it puts it to its mouth; but I am not sure, because I do not see the honey."

"You are very right not to say that you are sure of it, as you do not see it; but I believe that the bee does, as you say, draw the honey from flowers with that proboscis; and then he puts the honey into his mouth, and then swallows the honey. With a good magnifying-glass, you might see that the proboscis of the bee is rough, and you might see the little drops of honey sticking to it. The bee gets but one or two very small drops of honey from one flower."

"What a great deal of work it must be,

then, for the bees to collect as much honey as I ate this morning at breakfast! But, mamma, does this bee swallow all the honey it gets from this flower?"

"Yes, the bee swallows it; it keeps the honey in a little bag; and the bee has the power of forcing it up again from this bag, whenever it pleases. Usually, the bee carries the honey home to the hive, and puts it in the little waxen cells; such as those you saw in the honey-comb, to-day, at breakfast."

"And where do the bees get the wax, mamma, of which they make the cells in the honey-comb?"

"I am not sure, my dear, what that wax is; I believe that it is made partly of farina which the bees collect from the flowers, and partly of some sticky substance in the stomachs of the bees. Some time or other, you will read the accounts which have been written of bees; and then you will judge for yourself."

Frank looked through the glass pane into the bee-hive; but he said that the bees crowded so close to one another, that he could not see what they were doing.

His mother told him that, some other day, she would bring him again to see the bees at work, and that, by degrees, perhaps, he would distinguish them, and see what they were doing.

When Frank went home, he said, "Now, mamma, that I know what is meant by bees in their waxen cells, may I learn those lines? and will you repeat them to me?"

"It is troublesome to me, my dear," said his mother, "to repeat them so often over; but here is a book in which you can read them yourself; and you may now learn them by rote, if you like it."

Frank read the lines over and over, and tried to learn them by rote; and at last he could repeat them, as he thought, perfectly; and one day, after dinner, he went to his father, and told him that he could repeat some pretty lines to him, if he would give him leave.

"I shall be glad to hear them, Frank," said his father. "Begin and repeat them." So Frank repeated them, without making any mistakes; and when he had repeated them, his father asked him several questions about them, to try whether he understood them; and his father was pleased to find that he really did understand; and Frank told him that his mother had been so good as to show him a glowworm, and a moth, and a beehive, and that she had explained to him all the words in the lines which he did not at first understand.

"I am glad, my dear," said his father, "that you have had so much amusement

and that you have had the perseverance to learn any thing well, that you began to learn —— But, pray tell me why you have been continually buttoning and unbuttoning the left sleeve of your coat, whilst you have been talking to me, and whilst you were repeating these verses.”

“I do not know, papa,” said Frank, laughing; “only I remember that when I was getting the verses by rote, and saying them by myself, I first began buttoning and unbuttoning this sleeve, and then I could not say the verses so well without doing that.”

“And do not you remember, Frank,” said his mother, “that I spoke to you, several times, and told you that I was afraid you would get a trick, a habit, of buttoning and unbuttoning that sleeve of yours, if you did not take care?”

“Yes, mamma,” said Frank; “and I stopped whenever you spoke to me, and whenever I remembered it; but then I found myself doing it again, without thinking of it; and now, whenever I am trying to recollect any thing, I cannot recollect it half so well without buttoning and unbuttoning my sleeve.”

“Give me hold of your right hand,” said his father.

Frank gave his hand to his father.

“Now,” said his father, “repeat those lines to me once more.”

Frank began —

“‘Stay thy soft-murmuring waters, gentle rill ;  
Hush, whispering winds ——,’”

But here he twitched his hand, which his father held fast : —

“‘Hush, whispering winds ——,’

“Father, I cannot say it whilst you hold my hand.”

His father let go his hand.

Frank immediately buttoned and unbuttoned his sleeve, and then repeated, very fluently,

“‘Hush, whispering winds ; ye rustling leaves, be still ;  
Rest, silver butterflies ——,’”

But here his father caught hold of his hand ; and he could get no farther.

“My dear,” said his father, “it would be very inconvenient to you, if your memory was to depend upon your button ; for you see that I can make you forget, in an instant, all you have to say, by only catching hold of your hand.” “But, then, papa, if you would be so good as not to catch hold of my hand,” said Frank, “you would hear how well I could repeat the lines.”

“It is of little consequence,” said his father, “whether you repeat these lines to-day, or to-morrow ; but it is of great consequence that you should not learn foolish, awkward tricks ; therefore I beg you will not say them to me again, till you can hold your-



self perfectly still whilst you are repeating them."

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Frank's father and mother went out to walk, and Frank went with them. "O, I am glad you are going this way," said Frank, "because now I shall see the swing."

His father had had a swing put up between two trees; Frank had seen it from the window of the room in which he slept; but he had never yet been close to it; and he wished very much to see it, and to swing in it.

When he came up to it, he found that there was a soft cushion, fastened to the middle of the rope of which the swing was made.

One end of the rope was tied round the trunk of a large ash tree; and the other end of the rope was tied round the trunk of an oak, that was opposite to the ash.

The rope was tied towards the top of the trees; and some of the branches of the trees were cut away; so that the rope could swing backwards and forwards, without catching in any thing.

The cushion, which made the seat of the swing, hung so near the ground, that Frank could reach it; and he asked his father whether he might sit upon it.

His father told him that he might; and he said, "Take hold of the cord on each side of



you, and hold it fast ; and your mother and I will swing you."

Frank jumped up on the cushion directly, and seated himself, and took hold of the cord on each side of him, with each of his hands.

" You must take care not to let go the cord whilst we are swinging you," said his father ; " or perhaps you will tumble out of the swing, and hurt yourself."

" I will not let go, papa ; I will hold fast," said Frank ; and his father and mother began to swing him backwards and forwards. He liked it very much ; but it was a sharp even-

ing in autumn, and his father and mother did not like to stand still long to swing him.

“When you have had twenty more swings backwards and forwards, we will stop, Frank,” said his father. So Frank began to count the swings; and, whilst he was counting, a leaf fell from the tree, and put him out; and he tried to recollect whether the last number of swings he had counted to himself was six or seven; and the moment he began to try to recollect this, he let go the cord with his right hand; for he was going to button and unbutton his sleeve, as he had the habit of doing, when he was trying to recollect any thing.

The moment he let go the cord, he twisted a little in the seat, and could not catch the cord again; and he fell out of the swing.

He fell on the grass, and he hurt his ankle, but not much.

“It is well you were not more hurt,” said his father. “If we had been swinging you higher, and if you had fallen upon the gravel-walk, instead of on the grass, you might have been very much hurt. My dear, why did you let go the cord?”

“Papa,” said Frank, “because I was trying to recollect whether it was six swings or seven that I had had.”

“Well, and could not you recollect that, without letting go the cord?”

“No, papa; the thing was — that I was, I

believe, going to button my sleeve. I wish I had not that trick."

"You may cure yourself of it, if you take pains to do so," said his father.

"I wish I could," said Frank; "my ankle is not very much hurt, however. Papa will put me into the swing again; and I think I shall take more care not to let go the cord now. You know I have not had all my twenty swings, papa."

"No; you have had but eight," said his father; "but I am afraid, that if I were to put you into the swing again, and if you were to begin counting again, if you should not be able to recollect the number, you would let go the cord to button your sleeve, and you would slip out of the swing again."

"No, papa," said Frank; "I think this is the very thing that would cure me of that trick, because I do not like to tumble down, and hurt myself; and I think I should take care, and count, and recollect, without buttoning or unbuttoning this sleeve. May I try, papa?"

His father shook hands with him, and said, "I am glad to see that you can bear a little pain, and that you wish to cure yourself of this foolish trick. Jump, my boy," said his father; and Frank sprung up, and his father seated him in the swing again.

He counted and held fast by the rope this time; and, just when he was come to the

eighteenth swing, his father said to him, "Can you recollect the last number you counted, without letting go the rope to button your sleeve?"

"Yes, papa," said Frank, "I can; it was seventeen."

"And you have had two swings since I spoke last; how many does that make?"

Frank was just going to let go the cord to button his sleeve; but he recollected his former tumble. He held fast; and, after thinking for an instant, answered, "Seventeen swings and two swings make nineteen swings."

His father then gave him one good swing more, and then lifted him out; and his mother kissed him.

The next day his father was going from home; and, when he took leave of him, Frank asked him if there was any thing he could do for him whilst he was away.

"May I dust the books in your study, papa? I can do that," said Frank.

"I would rather, my dear," said his father, "that you should, whilst I am away, learn to repeat the lines which you got by heart without ———"

"I know what you mean, papa; I will try if I can."

His father went away; and Frank, after he was gone, asked his mother if she would take him to the swing, and swing him, and

let him try whether he could recollect some of the verses whilst he was swinging ; for then, you know, mamma, I cannot move my hands without tumbling out ; and I shall take care."

But his mother said, she did not choose to swing him, whilst his father was away ; and Frank soon afterwards said, " Will you be so good, then, mamma, as to cut off this button, and to sew up this button-hole for me ? and then I cannot button and unbutton it."

His mother cut off the button, and sewed up the button-hole ; and several times, when he was trying to repeat the lines, he felt for the button and button-hole ; but when he found that the button was gone, and that he could not put his finger into the button-hole, he, by degrees, left off feeling for them.

His father staid away a week ; and, in this time, Frank quite cured himself of the foolish trick which he had had, and he repeated the lines to himself ; whilst he held his hands quite still.

He asked his mother to sew on the button again, and to open the button-hole, the day his father came home ; and she did so.

And when his father came home, and after he had said, " How do you do, father ? " Frank cried, " May I say the lines now father ? "

" Yes, my dear."

He stood opposite to his father, held his



hands perfectly still, and repeated the lines without making a single mistake.

His father was pleased ; and he desired the servant, who was bringing some things of his out of the chaise in which he came, to give him a book that was in the front pocket of the chaise.

The book was Bewick's History of Quadrupeds ; it had very pretty prints in it.

Frank's father wrote, in a blank page at the beginning of it, —

*" This book was given to Frank, October the 27th, 1798, by his father, as a mark of his father's approbation for his having, at six years old, cured himself of a foolish habit."*

" Read that, if you can, Frank," said his father.

Frank could not read all the words ; for he was not used to read writing ; but his mother read it to him.

And Frank liked the prints in this book very much ; and he said, " Shall I read all that is in the book, papa ? "

" Read only what you can understand, and what entertains you in it, my dear," said his father.

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Frank was kneeling upon a chair, beside the table upon which his mother was writing. He was looking at the prints in his Bewick ;



and every minute he exclaimed, "O mamma, look at this! Mamma, here is a very pretty print! Only look at this one, mamma — the old, old man, going over a narrow bridge, and his dog leading him. He is a blind man, I suppose; and the wind has blown his hat off; and it is raining very hard. Pray look, mamma!"

His mother put down her pen, and she looked at the print, which she said was very pretty.

"But now, Frank," added she, "do not interrupt me any more."

Frank was silent after this ; but, whenever he turned over a new leaf, he put down both his elbows upon the table, to look at the new print ; and he shook the table, so that his mother could not write ; wherefore she at last desired him to take his book to another table. He did so ; but he said that he could not see nearly so well as when he was nearer to the light.

"If you had not disturbed me," said his mother, "I should not have sent you away from this table. You should consider what is agreeable to others, or they will not consider what is agreeable to you."

"Mamma," said Frank, "if you will let me come back to the table where you are sitting, I will take care not to shake the table."

His mother told Frank that he might come ; and he took care not to shake the table.

A little while after this, he was trying to draw the old man, going over the bridge. Pompey, a little dog that was in the room, jumped up, suddenly, behind Frank's chair, and shook the table.

"Fie, Pompey ! fie ! — down ! down !" cried Frank. "I don't like you, Pompey, at all."

"Why don't you like Pompey ?" said Frank's mother ; "you generally are very fond of him."

"Yes, mamma, so I am fond of him, gen-

erally ; but I don't like him now, because he shook me, and hindered me from drawing. O Pompey ! Pompey ! again you gave my elbow a great shake. Look, mamma ; just as I was drawing the old man's nose, he shook me."

" Who ? the old man ? "

" No, mamma, but Pompey. Just as I was drawing the old man's nose, Pompey shook me, and made me make the old man's nose as large as his whole head. O Pompey, you have spoiled my old man, entirely. But I'll rub out his nose, and draw it over again."

Just as Frank had finished drawing the old man's nose over again, the dog shook him again, and Frank was angry. " Don't shake, Pompey ; I have bid you several times not to shake, and still you go on shaking. Naughty Pompey ! why don't you do as you are bid ? "

" Perhaps the dog does not understand you," said Frank's mother.

" Well, but it is very disagreeable, that he should shake the table. I don't like him at all, to-night."

Here Frank began struggling with Pompey.

Pompey had his fore paws upon the table ; and Frank was trying to drag him back, by the hind legs ; but all this struggling shook the table very much.

" Frank, I don't like either you or Pompey, now," said Frank's mother ; " because you, both of you, shake the table, so that I cannot

write. Look, here is an O, that is as crooked as your old man's nose."

"I am very sorry, mamma," said Frank; "but will you be so kind as to put Pompey out of the room; and then we shall all be both quiet and happy.—You know you sent me to another table when I was troublesome; and now, if you put Pompey out of the room, he cannot be troublesome to us any more."

"Very true," said his mother; and she put Pompey out of the room.

"I am glad he is gone," cried Frank; "now I can draw nicely."

"And now I can write nicely," said his mother.

"Mamma, are you as glad when I go out of the room, after I have been troublesome, as we are now, that we have got rid of Pompey?"

"Yes."

"But when I am not troublesome, you are not glad when I go out of the room."

"No; I am glad to have you with me when you are not troublesome."

"And you are more glad to have me with you when I am useful to you, as I was yesterday, when I helped you to cut open the leaves of those new books which you wanted to read. You liked me very much then, when you said I was *useful* to you."

"Yes; people like those who are useful to them."

“And I like to be liked, mamma, by you, more than by any body ; so I will try always to be as useful to you as I can. I can be useful to you now, mamma, if you will give me leave.”

“I will give you leave in welcome, Frank,” said his mother, smiling. So Frank went for a little bit of wood, which his father had given to him ; and he cut it, with his knife, into the shape of a wedge ; and he put his wedge under one of the legs of the table, which was shorter than the other legs ; and the table was now much steadier than it was before.

“Now, mamma,” said Frank, “try to shake the table, and you will feel how steady it is ; I can put my elbows upon it now, without shaking it ; and I dare say even Pompey would not shake it, if he was to leap up as he did just now. Is not my wedge useful, mamma ?”

“Yes ; thank you for it, my dear.”

“And now, mamma, may I open the door, and let poor Pompey in again ? for he cannot easily shake us now.”

Frank’s mother told him that he might let Pompey in again ; and when Frank opened the door, he saw Pompey sitting upon his hind legs, holding something up in his forepaws. “O, mamma, it is my glove,” cried Frank, “the glove that I lost yesterday. Useful



Pompey! I like you for finding my glove. Useful Pompey! Come in, useful Pompey!"

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One evening at tea-time, there was a small plum-cake upon a plate on the tea-table, and there was a knife beside the plate. Frank's father and mother, and two of his brothers, were sitting round the table; his mother was beginning to pour out the tea; and she called to Frank, and said to him, "My dear, cut this plum-cake into five pieces for us, and take care that you make all the pieces of the same size, for your father, and your two brothers, and yourself, and me; and give us each a just share."

Frank began to cut the cake; but by mistake, he divided it into six parts, instead of into five.

"Mamma," said he, "what shall I do with this bit? I have five without it; one for you, and one for my father, and one for my brother Edward, and one for my brother Harry, and one for myself. What shall I do with this bit that is left?"

"What is most just to do with it?"

"I think I had better keep it myself, mamma, because it belongs to nobody, and I should have it for the trouble of cutting the cake for every body."

"No," said his brother Henry, "I do not think *that* would be just, because, then, you

would be rewarded for making a mistake ; if you had cut the cake rightly, there would not be this bit to spare."

"Well," said Frank, "I do not think it would be just that I should have it : but who, then, shall I give it to ? I will give it to you, mamma, because I like to give it to you best. — No, I will give it to papa, because he likes plum-cake better than you do. — Stay, I will give it to you, Henry, because you mended my kite for me. — No, indeed, I must give it to poor Edward, because he had no cherry-pie to-day, at dinner."

"But," said his mother, "what right have you, Frank, to give this bit of cake to poor Edward, because he had no cherry-pie to-day, at dinner ; or to good Henry, because he mended your kite ; or to your father, because he loves plum-cake better than I do ; or to me, because you like to give it to me ? What right have you to give it away to any of us ?"

"Mamma, you said that I was to give each of you your just share ; and I thought I was to be judge —"

"Remember that I desired you to divide the cake into five pieces, all of the same size ; you were to judge about the size of the pieces ; and you were to take care that we have each our just share ; but you are going to give one of us twice as much as any of the others."

"I cannot make the pieces the right size, now, mamma."

"But you can give us each equal quantities of cake : cannot you ?"

"How, mamma ?"

"Think : when you are trusted to divide any thing, you must take the trouble, Mr. Judge, to consider how it is to be done fairly."

Frank took the trouble to think ; and he then cut the spare bit of cake into five equal parts ; and he put these parts by the side of the five large pieces of cake, and gave one of the large pieces, and one of the little pieces, to each person ; and he then said, "I believe I have divided the cake fairly now." Every body present said, "Yes ;" and every body looked carefully at each of the shares, and there appeared exactly the same quantity in each share. So each person took their portion ; and all were satisfied. Justice satisfies every body.

"My dear Frank," said his mother, "as you have divided the cake so fairly, let us see how you will divide the sugar that was upon the top of the cake, and which is now broken and crumbled to pieces in the plate. We all like that sugar ; divide it equally among us."

"But this will be very difficult to do, mamma," said Frank, "because the pieces of sugar are all of such different sizes and

shapes ; and here are so many crumbs of cake mixed with the crumbs of sugar ; I do not know how I shall ever divide it exactly. Will it do, if I do not divide it quite exactly, ma'am ? ”

“ No,” said his mother ; “ I beg you will divide it quite exactly : you can do it, if you take the right way to do it.”

Frank first took out all the largest bits of sugar, and laid them upon one another, and broke off the corners and edges till he thought he had five of them of the same size exactly, and then he divided the crumbs, and little broken bits, into five heaps, which he thought seemed to be of the same size.

But when he had done, his brother Henry said, “ This heap next me is a great deal larger than any of the others.”

And Edward said, “ My heap is taller than yours ; but it is not so closely squeezed together ; and that makes a great difference.”

And his father said, “ Frank, my large bit of sugar is twice as big as your largest bit.”

“ O no, indeed, papa ; I measured them, and they are exactly the same size ; put yours upon mine, and you shall see. Look, papa — not the least corner or crumb difference.”

“ They are of the same length and breadth, I acknowledge,” said his father ; “ but they are not of the same thickness.”

“ O, thickness ! I never thought of thickness.”

"But you should think of it," said his father; "because, look here; if I was to cut my bit of sugar, which is twice as thick as yours, into two slices, each of those slices would be as long, and as broad, and as thick, as your bit is now, and I should have two bits of the same size as yours—twice as much as you."

"Ah! so you would; thickness does make a great difference. Then, how shall I manage? for if I begin to cut the sugar, in your way, in slices——Look, papa, it all crumbles. Indeed, the crumbs are the most easily divided. I will crumble it all, and then divide the crumbs amongst you; and then I shall have no difficulty about the thickness." So Frank pounded the sugar with a spoon, till it was all become a fine powder; and then he divided it into heaps; but still people did not agree that his heaps were all of the same size.

"We can measure them," said Frank; and he put one of the heaps into a tea-spoon; it did not quite fill the spoon. Another of the heaps filled the spoon higher than the brim. Another was exactly a spoonful.

Frank added to one heap, and took from another.

"You squeeze the sugar in the spoon, and that will make more go in than there should," said Henry.

"Indeed! indeed!" said Frank, "it can-

not be divided more exactly ; it is impossible to divide the sugar more exactly than I have done it now ; is not it, mamma ? ”

“ I cannot say that it is impossible to divide it more exactly,” said his mother, smiling ; “ but, as far as I can guess, by looking at your heaps, they seem to be of the same size. I cannot, however, be sure, merely by looking at them, that they contain exactly equal quantities.”

“ How, then, could you be sure ? I do not feel any difference, mamma. Perhaps I could find out by weighing them in a pair of scales. — Papa, will you be so good as to lend me the scales in which you were weighing — money, I believe, yesterday ? ”

“ No, my dear,” said his father ; “ the saucers of those scales are made of brass ; and you must not put any thing that you are going to eat near brass, because the rust of brass is poisonous. I will lend you another pair of scales, which are made of ivory ; and in these you may weigh your sugar. — Go for these scales ; they are upon the table that is on the right-hand side of the window in my study. — As you are used to find your way about the house in the dark, you will readily find what you want.”

Frank found the scales, and weighed his heaps of sugar very carefully. He was surprised to find that there was so much difference in the weight of the heaps, which he



thought were exactly of the same size. By patiently adding and taking away, he at last, however, made them each of the same weight; and every body was then satisfied with the accuracy of his division.

“Now, Frank, eat your own share of cake, and drink this dish of tea, which has grown quite cold whilst you have been dividing and weighing,” said his mother. And whilst Frank and his brothers were eating their shares of plum-cake, Frank’s father said that, if they pleased, he would read a short story to them. The boys said that they should like to hear a story; and the story that he read was out of Sandford and Merton — Cyrus’s judgment about the two coats.

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One day, Frank went with his mother to a shop in a town: it was a shop where gloves, and ribands, and caps, and hats, were sold. His mother, after she had bought some gloves which she wanted, went into a little room behind the shop, to see a poor girl, who was ill.

“Frank,” said his mother, “stay in this shop till I come back again.”

Frank staid in the shop; and whilst he was there, a carriage stopped at the door; and a lady got out of the carriage and came into the shop where Frank was; she asked to look at some ribands; and whilst the

shop-man was looking in some little drawers for ribands, the lady turned to look at Frank, and said, "Does this little boy belong to you?" meaning the shop-keeper.

"O, no, ma'am; he belongs to a lady who is just gone into the next room;" and the shop-keeper mentioned the name of Frank's mother.

The moment the lady heard this, she smiled at Frank, called him to her, kissed him, and told him he was a charming little creature. She then asked him several questions; and Frank was pleased by her smiling at him, and praising him; and he began to talk to her; and then she said he was the finest boy she had ever seen in her life; and he liked her still better.

She was rolling up some riband in a paper upon which some words were printed; and she asked him whether he could read any of those words. — "O, yes," said Frank; and he read, "Sarsnets, modes, and peelings; the most fashionable assortment."

The lady stopped his mouth by kissing him; and she told him he was a very clever little fellow, indeed.

Frank thought he should appear to her still cleverer, if he repeated the pretty verses he had learned by heart. "O, what a memory he has! I never heard any thing so well repeated!" exclaimed the lady.

Frank went on to tell the history of his

having cured himself of the trick of buttoning and unbuttoning his coat ; and he told her, that his father had given him a book ; and he repeated, word for word, what his father had written at the beginning of this book.

To all this the lady listened with a smiling countenance ; and Frank was going on talking about himself, when his mother came out of the room at the back of the shop ; and she called Frank, and took him home with her.

The next day, his mother, who usually let Frank read to her a little every day, told him that he might bring his book to her and read ; but he made several mistakes, and his mother said, " Frank, you are not minding what you are about this morning."

Frank read on, more carefully ; and when he had read about half a page without making any mistake, he stopped short, and said to his mother, " But, mamma, you do not praise me as the lady in the shop did."

" I do not flatter you, my dear," said his mother.

" What is flattering me, mamma ?"

" Flattering you, my dear, is praising you more than you deserve to be praised."

" Did the lady in the shop flatter me, mamma ?"

" I do not know ; for I was not by ; I did not hear what she said."

"She said — I feel, mamma, I do not know why, ashamed to tell you all she said to me. She said I was a charming little creature, and that I was the finest boy she had ever seen in her life; and she said I was a very clever little boy indeed, when I read something about sarsnets and modes, that was printed on a paper in which she was rolling up some riband; and when I repeated the verses to her, mamma, she said she never heard any thing so well repeated in her life."

"And did you believe all this, Frank?"

"Not quite, mamma. I made some mistakes when I was repeating the verses; and she did not take notice of that."

"And did you understand what you read about sarsnets and modes?"

"O mamma, I was sure you would ask that question! How came it that the lady never asked me that? And there was something about *fashionable assortment*. She kissed me for reading that; and all the time I did not-understand those words. When you kiss me and praise me, mamma, I feel quite sure that I have done something well, or good; I know what you are pleased with me for; but I did not know exactly why that lady was so much pleased with me; do you know, mamma?"

"No, my dear; and I am not sure that she was much pleased with you."

"O yes, mamma, I think she really was

very much pleased with me, though she was a foolish woman, and did not know why."

"Did not know why she was a foolish woman, do you mean?"

"No, mamma, but did not know why she was pleased with me."

"In that respect," said his mother, laughing, "it seems that you were as foolish as she was."

"But, mamma," said Frank, "why are you not quite sure that she liked me?"

"Because, my dear, I have often heard people tell children that they were sweet creatures, and charming dears, and clever fellows; and I have observed that these people forget the charming dears as soon as they are out of sight."

"You and my father never do so; do you?"

"Never."

"I had rather that you and papa should praise me, and like me, than the lady I saw in the shop. I think I was very foolish to tell her what my father wrote in my book, because she did not care about it, I suppose."

"You will be wiser another time," said his mother. "Now put on your hat, and let us go to look at the bees at work in the glass bee-hive."

They went to the old woman's cottage; and the little boy opened the garden-gate; and Frank went to the bee-hive, to observe

the bees, whilst his mother sat down in the arbor, and took a book out of her pocket, in which she read for some time. It entertained Frank more, to-day, to look at the bees, than it did the first morning he came to look at them, because he saw more distinctly what they were doing. And when he had attended to the bees as long as he liked, he went to the arbor, where his mother was sitting, and he asked her whether he might go and talk to the little boy, who was now weeding in the garden.

His mother said that she would rather that he should not talk to this little boy; but she went to him herself, and thanked him for letting Frank look at his bee-hive; and she told him that if he would come to her house, she would give him a pair of strong shoes, which she had had made him.

Then she took Frank by the hand, and went to the cottage.

Somebody was talking to the old woman, very eagerly, about washing a gown.

The person who was talking was a maid-servant; and she had a muslin gown in her hand, which she said her mistress had desired her to take to be washed.

This old woman was a washerwoman.

“Look here!” said the maid, showing the bottom of the muslin gown, on which there were the marks of shoes, which had trodden upon it, and on which there was the mark of



a large hole, that had been mended. "Look here: what a piece of work I have had this morning! Yesterday my mistress came home with her gown torn and dirtied in this manner; and she told me it was all done by a little mischievous, troublesome, conceited brat of a boy, that she met with in the milliner's shop at —, where she was yesterday."

Whilst the maid was saying this, she did not see Frank nor his mother; for her back was turned towards the door through which they came.

"O mamma!" cried Frank, "I remember that was the gown the lady had on who called me a charming little fellow, and who *praised* I mean the other word, *flattered* me so much; but now she calls me a little mischievous, troublesome, conceited brat, only because I trod upon her gown by accident, and tore it. I did not know I had torn it. I remember I caught my foot in it, when you called me to come away with you, mamma. If I had torn or dirtied your gown, I do not think you would have been so angry with me. The next time any body begins to flatter me, and to tell me that I am a *charming little dear*, I shall recollect all this, and I shall not repeat my verses, nor tell them what papa wrote in my book."

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Frank, who had seen the little boy to whom the bee-hive belonged weeding the beds in the garden, said to his mother one morning, "I should like to try to weed some of the borders in your garden, as that little boy weeds the beds in his grandmother's garden."

Frank's mother said that he might weed one of the borders in her garden; and she lent him a little hoe; and he went to work, and weeded a piece of the border very carefully; and his mother looked at it, when he had done, and said that it was very well done.

The same day, at dinner, Frank's father gave him a bit of cheese; and his mother was surprised to see Frank take this cheese off his plate, and put it betwixt his fore finger and his middle finger; then he took a piece of bread, and stuck it betwixt his middle finger and his fourth finger; and then he took a large mouthful of the cheese, and a large mouthful of the bread, so that his mouth was filled in a very disagreeable manner.

"Pray, Frank," said his mother, "what are you about?"

Frank's mouth was not empty for nearly a minute; and he could make no answer.

"Where did you learn this new method of eating bread and cheese?"

"Mamma," said Frank, "I saw the little boy, in the cottage, eating his bread and

cheese, after he had done weeding; and he ate it just in this way."

"And why should you eat in that way, because you saw him do so?"

"Mamma, I thought you liked that little boy; I thought he was a very good boy. Do not you remember his bringing me back the bunch of ripe cherries, that I dropped? You called him an honest little fellow; and do not you remember that he has been very good-natured in telling us all he knew about bees, and in letting me look at his glass bee-hive? And you know, mamma, this morning, you said, when you saw him at work, that he was very industrious; did not you?"

"Yes, I did. I think he is very industrious, and that he was good-natured, in letting you look at his glass bee-hive; and honest, in returning to you the bunch of ripe cherries which you dropped; but what has all this to do with his method of eating bread and cheese?"

"I do not know, mamma," said Frank, after thinking a little while. "Nothing to do with it! But I thought you would be pleased to see me do every thing like him, because you were pleased this morning, when you saw me weeding like him."

"You may weed like him," said Frank's mother, "without eating like him; he weeds well; but he eats disagreeably. I shall be glad to see you as honest, and as good-na-

tured, and as industrious, as he is ; but I should be sorry to see you imitate his manner of eating, because that is disagreeable. Sensible people do not imitate every thing which they see others do ; they imitate only what is useful or agreeable."

Frank took the bread and cheese from betwixt his fore finger and middle finger, and from between his middle finger and his fourth finger ; and he put the cheese upon his plate, and did not any longer imitate the manner in which he had seen the little boy, in the cottage, cram his mouth.

"Did you ever hear," said Frank's father, "of the manner in which apes are sometimes caught?"

"No, papa."

"Apes are apt to imitate every thing which they see done ; and they cannot, as you can, Frank, distinguish what is useful and agreeable from what is useless or disagreeable ; they imitate every thing without reflecting. Men who want to catch these apes, go under the trees in which the apes live ; and the men take with them basins, with water in them, in which they wash their own hands ; they rub their hands, and wash, for some time, till they perceive that the apes are looking at them ; then the men go away, and carry with them the basins of water ; and they leave under the trees large, heavy, wooden basins, filled with pitch : you

have seen pitch, Frank ; you know that it is a very sticky substance. The apes, as soon as the men are out of sight, come down from the trees, and go to the basins, to wash their hands, in imitation of the men. The apes dip their hands into the pitch ; and the pitch sticks to their hairy hands ; and the apes cannot draw their hands out of the pitch. Now, these animals usually run upon all-fours."

"All-fours, papa !" interrupted Frank ; "how is that ?"

"As you run upon your hands and feet, upon the carpet, sometimes. — The apes cannot run well, for want of their hands, and because the wooden bowls, which stick to their hands, are so heavy. The men who left these bowls come back, and find the apes caught in this manner."

"I think these apes are very foolish animals," said Frank.

"So do I," said his father ; "no animals are wise, who imitate what they see done, without considering the reason why it is done."

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Frank asked his mother if she would take him again to the cottage garden, to see the bees at work in the glass bee-hive ; but his mother answered, "I am afraid to take you there again, till I am sure that you will not imitate the little boy in every thing which you see him do ; for instance —"

“O mamma!” said Frank, “I know what you are going to say. But to-day, at dinner, you shall see that I will not eat in that disagreeable way.”

His mother attended to him several days; and when she observed that he did not imitate this boy any more in his manner of eating, she took him again to the cottage.

The old woman was spinning; and Frank stopped to look at her spinning-wheel; and he asked his mother what was the use of what the old woman was doing.

She told him that the woman was twisting a kind of coarse thread, called yarn, and that her spinning-wheel was a machine which helped her to do this quickly. His mother then asked Frank, whether he knew where the thread came from.

“No, mamma,” said Frank.

“It comes from a plant called flax, my dear,” said his mother; “I think you went with me, last summer, through a field in which you saw flax. You took notice of its pretty blue flowers.”

Frank said that he did remember this; but that he could not imagine how the thread which he saw upon the spinning-wheel, could come from that green plant with the blue flowers.

His mother told him that she would show him, whenever she had an opportunity.

The old woman, who was spinning, told



Frank's mother, that a neighbor of hers was this very day hackling some flax, and that, if she liked to let Frank see how it was done, she would show her to the house where her neighbor lived.

"I should like to see what is meant by hackling flax," said Frank.

"Then come with us, and you shall see," said his mother.

Frank followed his mother to another cottage, where he saw a woman beating, with the edge of a thin bit of wood, something which, he thought, looked a little like very yellow, dry hay; but his mother told him that this was flax.

As the woman beat it, a great deal of dust and dirt fell out of it, upon the ground; and by degrees, the flax which she held in her hand looked cleaner and cleaner, and finer and finer, till at last it looked like yellow hair.

"But, mamma," said Frank, "the flax which I saw last summer, growing in a field near this house, had long green stalks, and blue flowers; and I saw no yellow threads like these. — Is this a different kind of flax?"

"No, my dear, this is the same flax. The blue flowers have withered and died."

When the blue flowers began to wither, the woman pulled up all the green stalks, and bound them together in bundles, and put

these bundles under water, in a ditch, where she left them for about a fortnight; during this time, the green outside of the stalk decayed, and the stringy part remained; she then untied the bundles, and spread them out, near a fire, to dry; and then she brought the flax home. "And this," said she, showing Frank a bit of the flax, which the woman had not yet beaten and cleaned, "this is the flax, as it looks after it has been soaked in water, and dried."

"And what is going to be done to it now, mamma?" said Frank, who observed that the woman was now placing two small boards before her, on which were stuck, with their points upright, several rows of steel pins; their points were as sharp as needles.

"I am going to hackle the flax, master," said the woman; and she began to comb the flax with these steel combs; she drew the flax through the pins, several times. The board, into which the pins were stuck, was fastened upon the table; and, as the woman drew the flax through the pins, it was disentangled, and combed smooth.

"Mamma," said Frank, "it is just like combing hair out, only the woman does not move the comb, but she draws the hair — the flax, I mean — through it."

The pins in one of the boards were much smaller, and placed closer together, than those in the other board.



“This is the large comb, and this is the small-tooth comb, mamma,” said Frank.

And when the flax had been drawn through these fine pins, there was not a tangle left in it; and it looked smooth, bright, and shining, and of a light, yellow color.

Frank’s mother showed him that this looked the same as what he had seen on the old woman’s spinning-wheel.

They went back to the spinning-wheel; and the old woman sat down, and spun a little; and Frank saw that the threads of the flax were twisted together——He did not exactly know how; and his mother told him

he must not expect to find out how it was done, by looking at it for a few minutes.

Frank said, "Mamma, I feel tired; my eyes are tired of looking; and I am tired with thinking about this spinning-wheel."

"Then do not think any more about it now; go, and run about the garden;" and Frank ran into the garden; and he jumped and sang; and then he listened to the birds, who were singing; and he smelled the flowers, particularly rosemary and balm, which he had never smelled before; and he heard the humming of bees near him, as he was smelling to the rosemary; and he recollected that he had not looked at the bees this day; so he ran to the glass bee-hive, and watched them working.

And afterwards he ran back to his mother, and said, "I am quite rested now, mamma — I mean, I do not feel tired of thinking about the spinning-wheel. May I look at the woman spinning again?"

"Yes, my dear."

Frank went into the cottage, and looked at the old woman, who was spinning.

"Would you like to try to spin a bit, dear?" said the old woman.

"Yes, I should," said Frank; "it looks as if it was very easy to do it; but perhaps it is not; for I remember, I could not plane with the carpenter's plane, though it seemed very easy when he was doing it."

Frank tried to spin ; but he broke the thread, almost at the first trial ; however, the old woman clapped her hands, and said, " That's a pretty dear ! — He spins as well as I do, I declare ! "

" O, no, no, no, " said Frank ; " I know I cannot spin at all ; " and he looked ashamed, and left the spinning-wheel, and turned away from the old woman, and went back to his mother.

She walked home with him ; and, as they were walking home, his mother said to him :

" Do you know why you came back just now, Frank ? "

" Yes, mamma ; because the woman called me pretty dear, and told me that I could spin as well as she could ; and you know I could not ; so that was flattering me ; and I do not like people that flatter me. I remember the lady in the shop, who flattered me, and afterwards called me a mischievous brat ; but I do not much like to think of that. Mamma, of what use is that brown thread which the old woman made of the flax ? "

" Of that brown thread, linen is made, my dear. "

" But linen is white, mamma ; how is the brown thread made white ? "

" It is left in a place where the sun shines upon it ; and there are other ways of making linen white, which I cannot now explain to you. Making linen white, is called bleaching it. "

"Can you explain to me, mamma, how thread is made into linen?"

"No, my dear, I cannot; but perhaps your father, when you are able to understand it, may show you how people weave linen in a loom."

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One night, when Frank's brother Henry was with him, they were talking of Henry's garden.

Henry said, "Next spring, I intend to sow some scarlet runners, or French beans, in my garden."

"Whereabouts in your garden?" said Frank. Henry tried to describe to him whereabouts; but Frank could not understand him; so Henry took his pencil out of his pocket, and said, "Now, Frank, I will draw for you a map of my garden; and then you will understand it."

He drew the shape of his garden upon paper; and he marked where all the little walks went, and where the rose-bush stood, and where the sally-fence was; and he drew all the borders, and printed upon each of the borders the name of what was planted there when Frank last saw it.

Frank, after he had looked at this drawing for a little while, understood it, and saw the exact spot in which Henry intended to sow his scarlet runners.



"So this is what you call a map," said Frank; "but it is not like the maps in papa's study."

"They are maps of countries, not little gardens," said Henry.

"I suppose they are of the same use to other people, that the little map of your garden was to me; to show them whereabouts places are. But, Henry, what are those odd-shaped, crooked bits of wood, which hook into one another, and which I thought you called a map?"

"That is a map, pasted upon wood; and the shapes of the different places are cut out through the paper and through the wood; and then they can be joined together again, exactly the same shape that they were in at first."

"I don't understand how you mean," said Frank.

Henry cut out the different beds and walks, in the little map which he had drawn of his garden; and when he had separated the parts, he threw them down upon the table, before Frank, and asked him to try if he could put them together again, as they were before.

After some trials, Frank did join them all together; and he told Henry that he should very much like to try to put his wooden map together, and that he would be very much obliged to him, if he would lend it to him.

"I am afraid," said Henry, "to lend you

that map, lest you should lose any of the parts of it."

"I will not lose them, I assure you."

"I tried every day for a week," said Henry, "before I was able to put it all together; and after I had done with it every day, I put it into the box belonging to it; and I regularly counted all the bits, to see that I had them right."

"I will count them every day before I put them by, if you will lend them to me," said Frank.

"If you will promise me to do so," said Henry, "I will lend you my map for a week."

Frank was eagerly going to say, "*Yes, I will promise you,*" when he felt a hand before his lips; it was his mother's. "My dear Frank," said she, in a serious tone of voice, "consider before you ever make any promise. No persons are believed, or trusted, who break their promises; you are very young, Frank, and you scarcely know what a promise means."

"I think I know, mamma, what this promise means," said Frank.

"And do you think you shall be able to keep your promise?"

"Yes, mamma," said Frank, "I hope that I shall."

"I hope so too, my dear," said his mother; "for I would rather that you should nev-

er put that map together, than that you should make a promise and break it."

Frank promised Henry that, whenever he took the map out of the box, he would count the pieces, to see whether he had the right number, before he put them again into the box.

"Remember," said Frank, "I do not promise that I will not lose any of the pieces of the map; I promise only to count them; but I hope I shall not lose any of them."

Henry told him that he understood very well what he said; and he put the box into his hands.

Frank immediately counted the pieces of the map. It was a map of England and Wales; and there were fifty-two pieces; one to represent each county.

"Fifty-two; fifty-two; fifty-two;" repeated Frank, several times; "I am afraid I shall forget how many there are."

"Then," said Henry, "you had better write it down. — Here is a pencil for you; and you may write it upon the lid of the box."

Frank wrote a two, and five after it.

"That is not right," said Henry; "that is twenty-five; and you know that there are fifty-two."

"Then," said Frank, "I must put the five to my left hand, and the two to my right hand, to make fifty-two. Mamma, I did not

understand what papa told me once, about the place of units, and tens, and hundreds."

"Then you had better ask him to explain it to you again, when he is at leisure; for want of knowing this, when you were to write fifty-two, you wrote twenty-five."

"That was a great mistake; but papa is busy now, and cannot explain about units and tens to me; therefore I will put the map together, if I can."

Frank could not put the map together, the first night that he tried, nor the second day, nor the third; but he regularly remembered to count the bits, according to his promise, every day before he put them into the box.

One day he was in a great hurry to go out to fly his kite; but all the pieces of the map were scattered upon the carpet; and he staid to count them, and put them into the box, before he went out.

It was not easy to get them into the box, which was just large enough to hold them when they were well packed.

The lid of the box would not slide into its place when the pieces of the map were not put in so as to lie quite flat.

One day — it was Friday — Frank saw his father open a large book, in which there were very pretty prints of houses; and he was eager to go to look at these prints; but his map was upon the table; and he thought he had

better count the pieces, and put them into the box, before he went to look at the prints, lest he should forget to do it afterwards, therefore he counted them as fast as he could. They were not all right. Fifty-two was the number that had been lent him; and he could not find but fifty-one.

He searched all over the room; under the tables; under the chairs; upon the sofa; under the cushions of the sofa; under the carpet; every where he could think of. The lost bit of the map was nowhere to be found; and whilst he was searching, his father turned over all the leaves in the book of prints, found the print that he wanted, then shut the book, and put it into its place, in the book-case.

Frank was at this instant crawling from beneath the sofa, where he had been feeling for his lost county. He looked up and sighed when he saw the book of pretty prints shut, and put up into the book-case.

“O papa! there is the very thing I have been looking for all this time,” cried Frank, who now espied the bit of the map which he had missed; it was lying upon the table, and the book of prints had been put upon it, so that Frank never could see it till the book was lifted up.

“I am glad I have found you, little crooked county of Middlesex,” said Frank. —  
“Now I have them all right — fifty-two ”

The next morning — Saturday — the last day of the week during which the map was lent to Frank, he spent an hour and a half \* in trying to put it together ; and at last he succeeded, and hooked every county, even crooked little Middlesex, into its right place.

He was much pleased to see the whole map fitted together. “Look at it, dear mamma,” said he ; “you cannot see the joining, it fits so nicely.”

His mother was just come to look at his map, when they heard the noise of several sheep ba-a-ing very loud near the windows. Frank ran to the window ; and he saw a large flock of sheep, passing near the window ; a man and two women were driving them.

“How fat they look, mamma !” said Frank ; “they seem as if they could hardly walk, they are so fat.”

“They have a great deal of wool upon their backs.”

“Mamma, what can be the use of those large, very large, scissors, which that woman carries in her hand ? ”

“Those large scissors are called shears ; and with them the wool will be cut from the backs of these sheep.”

“Will it hurt the sheep, mamma, to cut their wool off ? ”

\* A boy of four years old spent, voluntarily, above an hour and a half in attempts to put together a joining map.



“Not at all, I believe.”

“I should like, then, to see it done ; and I should like to touch the wool. What use is made of wool, mamma ? ”

“Your coat is made of wool, my dear.”

Frank looked surprised ; and he was going to ask how wool could be made into a coat ; but his father came into the room, and asked him if he should like to go with him to see some sheep sheared.

“Yes, very much, papa, thank you,” said Frank, jumping down from the chair on which he stood.

“I shall be ready to go in five minutes,” said his father.

“I am ready this minute,” said Frank ; “I have nothing to do, but to get my hat, and to put on my shoes.” But just as he got to the door, he recollected that he had left Henry’s map upon the floor ; and he turned back, and was going hastily to put it into the box ; but he then recollected his promise to count the pieces every day, before he put them into the box. He was much afraid that his father should be ready before he finished counting them, and that he should be left behind, and should not see the sheep sheared ; but he kept his promise exactly ; he counted the fifty-two pieces, put them into the box, and was ready the instant his father called him.

He saw the wool cut off the backs of the sheep ; it did not entertain him quite so

much as he had expected, to see this done ; but when he returned home, he was very glad to meet his brother Henry in the evening ; and he returned the box of maps to him.

“ Thank you, Henry,” said he ; “ here is your map, safe. Count the pieces, and you will find that there are fifty-two. And I have kept my promise ; I have counted them every day, before I put them into the box. My mother saw me count them every day.”

“ I am glad, Frank, that you have kept your promise,” said Henry, and his mother, and his father, all at once ; and they looked pleased with him.

His father took down the book of pretty prints, and put it into Frank’s hands.

“ I will lend you this book for a week,” said his father ; “ you may look at all the prints in it ; I can trust you with it ; for I saw that you took care of Henry’s map, which was lent to you.”

Frank opened the book, and he saw, upon the first page, the print of the front of a house.

“ The reason I wished to look at this book so much,” said Frank, “ was, because I thought I saw prints of houses in it ; and I am going to build a house in my garden.”

“ You have kept your promise so well,” said Henry, “ about the map, that I will lend you what I would not lend to any body that I could not trust ; I will lend you my

box full of little bricks, if you will not take them out of doors, nor wet them."

Frank said that he would not either take them out of doors or wet them.

And Henry believed that Frank would do what he said that he would do, because he had kept his promise exactly in respect to the map.

Frank received the box full of little bricks, with a joyful countenance; and his mother gave him leave to build with them in the room in which he slept.

Henry showed him how to break the joints, in building — how to build walls and arches. And Frank was happy in building different sorts of buildings, and staircases, and pillars, and towers, and arches, with the little bricks which were lent to him. And he kept his promise not to wet them, and not to take them out of doors.

"It is a good thing to keep one's promise," said his mother: "people are trusted who keep their promises — trusted even with little bricks." \*

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\* These little bricks were made of plaster of Paris; they were *exactly* twice as long as they were broad, and twice as broad as they were thick. Two inches and a quarter long is a convenient length, being one quarter of the length of a common brick. Common bricks are not exactly in the proportion above mentioned, as there is generally allowance made for mortar. A few lintels of wood, the depth and breadth of a brick, and twelve inches and three quarters long, will be found very convenient; these should be painted exactly to match the color of the bricks.

It was autumn. The leaves withered, and fell from the trees; and the paths in the grove were strewed with the red leaves of the beech-trees.

Little Frank swept away the leaves in his mother's favorite walk in the grove: it was his morning's work to make this walk quite clean; and as soon as dinner was over, he slid down from his chair; and he went to his mother, and asked her if she would walk out this evening in the grove.

"I think," said his mother, "it is now too late in the year to walk after dinner; the evenings are cold; and ——"

"O mamma!" interrupted Frank, "pray walk out this one evening. Look! the sun has not set yet; look at the pretty red sunshine upon the tops of the trees. Several of the trees in the grove have leaves upon them still, mamma; and I have swept away all the withered leaves that were strewed upon *your path*. Will you come and look at it, mamma?"

"Since you have swept my path, and have taken pains to oblige me," said his mother, "I will walk with you, Frank. People should not always do just what they like best themselves; they should be sometimes ready to comply with the wishes of their friends; so, Frank, I will comply with your wish, and walk to the grove."

His mother found it a more pleasant even-

ing than she had expected; and the walk in the grove was sheltered; and she thanked Frank for having swept it.

The wind had blown a few leaves from one of the heaps which he had made; and he ran on before his mother, to clear them away. But as he stooped to brush away one of the leaves, he saw a caterpillar, which was so nearly the color of the faded green leaf upon which it lay, that he, at first sight, mistook it for a part of the leaf. It stuck to the leaf, and did not move in the least, even when Frank touched it. He carried it to his mother, and asked her if she thought that it was dead, or if she knew what was the matter with it.

"I believe, my dear," said his mother, "that this caterpillar will soon turn into a chrysalis."

"Chry —— what, mamma?"

"Chrysalis."

"What is a chrysalis?"

"I cannot describe it to you; but if you keep this caterpillar a few days, you will see what I mean by a chrysalis."

"I will. But how do you know, mamma, that a caterpillar will turn into a chrysalis?"

"I have seen caterpillars that have turned into chrysalises; and I have heard that they do so, from many other people, who have seen it; and I have read, in books, accounts of caterpillars that have turned into chrysa-

lises ; and this is the time of year in which, as it has been observed, this change usually happens."

"But, my dear mother," said Frank, "may I keep this caterpillar in my red box ? And what shall I give it to eat ?"

"You need not give it any thing to eat ; for it will not eat whilst it is in this state ; and you may keep this caterpillar in your box ; it will soon become a chrysalis ; and, in the spring, a moth, or butterfly, will come out of the chrysalis."

Frank looked much surprised at hearing this ; and he said that he would take great care of the caterpillar, and that he would watch it, that he might see all these curious changes.

"Who was the first person, mamma, that ever observed that a caterpillar turned into a chrysalis, and a chrysalis into a butterfly ?"

"I don't know, my dear."

"Mamma, perhaps, if I observe, I may find out things, as well as other people."

"Yes, very likely you may."

"Mamma, how did the person who wrote about animals, in my book that my father gave me, find out all that he knew ?"

"Partly from reading other books, and partly from observing animals himself."

"But, mamma," said Frank, "how did the people, who wrote the other books, know all the things that are told in them ?"



“By observing,” said his mother. “Different people, in different places, observed different animals, and wrote the histories of those animals.”

“I am very glad that they did. Did they ever make mistakes, mamma?”

“Yes, I believe that they did make a great many mistakes.”

“Then every thing that is in books is not true; is it?”

“No.”

“I am sorry for that. But how shall I know what is true, and what is not true, in books, mamma?”

“You cannot always find out what is true, and what is not true, in books, till you have more knowledge, my dear.”

“And how shall I get more knowledge, mamma?”

“By observing whatever you see, and hear, and feel; and trying experiments.”

“Experiments, mamma! Papa, and grown up, wise people, try experiments; but I did not know that such a little boy as I am could try experiments.”

Frank and his mother had walked on, whilst they were talking, till they came to a path which led to the river side.

A little girl was by the river side, dipping a yellow earthen jug into the water.

The girl did not perceive Frank and his mother, who were coming behind her, till she



heard Frank's voice, which startled her ; and she let the pitcher fall from her hand, and it broke.

The girl looked very sorry that she had broken the jug ; but a woman, who was standing beside her, said, " It is no great misfortune, Mary ; for we can take it home, and tie it together, and boil it in milk, and it will be as good as ever."

" My dear mother," cried Frank ; " then we can mend the broken flower-pot. Shall we do it, as soon as we get home ? "

"We can *try* to do it as soon as we go home."

"*Try*, mamma! But are you not sure it will do? That woman said the jug would be as good as ever, if it was tied together, and boiled in milk."

"Yes; but she may be mistaken. We had better try the experiment ourselves."

"Is that called trying an experiment?"

"Yes; this is an experiment we can try."

When they got home, Frank's mother rang the bell, and asked to have a clean saucepan brought up stairs; and when the saucepan was brought to her, she tied the pieces of the broken flower-pot together, with pack-thread, in the same shape that it was before it was broken. She put the flower-pot into the saucepan; and she poured over it as much milk as entirely covered it; and after she had put the saucepan on the fire, she waited till the milk boiled; then she took the saucepan off the fire; and she waited till the milk grew so cool that she could dip her fingers into it, without burning herself; and she took out the flower-pot, and carefully untied the wet pack-thread, and unwound it; but when she had untied it, the parts of the flower-pot did not stick together; they separated; and Frank was disappointed.

"But, mamma," said he, "I wish you would be so good as to send to the woman, and ask her how it was that she could mend

broken things by boiling them in milk ; perhaps she knows something about it that we do not know yet."

"Stay," said Henry ; "before you send to the woman, try another experiment. Here's a saucer which I broke just before you came in from walking — I was rubbing some Indian ink upon it, and I let it slip off the table. Let us tie this together, and try whether you can mend it by boiling it in the milk."

The saucer was tied together ; the milk that was in the saucepan was poured out, and some cold milk was put into it ; into this milk the saucer was put, and the milk was then boiled ; and the moment the saucepan was taken off the fire, Frank was impatient to see the saucer. Before it was nearly cool, he untied the string ; the parts of the saucer did not stick together ; and Frank was more disappointed now than he had been before.

His mother smiled, and said, "Frank, people who wish to try experiments, you see, must be patient."

The woman, whom he had heard speaking to the little girl by the river side, lived very near to them ; and Frank's mother sent to beg to speak to her. She came ; and when she was told what had been done about the flower-pot and the saucer, she asked whether it was a long time since the flower-pot had been broken.

"Yes, about two months."

"Then, ma'am," said she, "that could not be mended this way; I can only mend things this way, that have been fresh broken."

"Mamma," said Frank, "how comes it that the saucer, which Henry did but just break before we came in from walking, did not stick together, after all we did to it?"

"Perhaps, master," said the woman, "you did not let it stand to cool before you untied it."

"No, I did not," said Frank; "I will be more patient this time, mamma, if you will let me try once more."

His mother let him try once more. As he was tying the broken saucer together, the old woman said to him, "Tie it very tight, and fit it close and even, or it will not do."

He waited till the saucer was cold this time, and then he untied the string; and he found that the parts of the saucer stuck fast together; and he could scarcely see the place where they were joined.

He was pleased with this success; and he said, "People must be patient who try experiments; and people must be patient who are to observe things; and then I shall see the chrysalis change to a moth or a butterfly. But, mother, first I shall see the caterpillar change to a chrysalis."

Frank put his green caterpillar into his red box; and then he went again to look at the

saucer which had been mended, and at the flower-pot which the old woman said could not be mended ; and he asked his mother if she could tell the reason why things which had been broken a long time before could not be mended by being boiled, in this manner, in milk.

“ I think I can guess the reason,” said his mother ; “ but I will not tell it to you ; I would rather that you should think and find it out for yourself. If I were to tell you the reason of every thing, my dear, you would never take the trouble of thinking for yourself ; and you know I shall not always be with you, to think for you.”

“ Mamma,” said Frank, “ there is a reason that I have thought of ; but I am not sure that it is a right reason ; but it may be one of the reasons.”

“ Well, let us hear it, without any more reasons,” said his mother, laughing.

“ I thought, mamma,” said Frank, “ that perhaps the old woman could never mend things — ”

“ Things ? what sort of things ? chairs and tables, or coats and waistcoats ? ”

“ O mamma, you know very well what I mean.”

“ Yes, I guess what you mean ; but other people will not be at the trouble of guessing at the meaning of what you say ; therefore, if



you wish to be understood, you must learn to explain yourself distinctly."

"I thought, mamma," said Frank, "that the reason why the old woman could never mend cups and saucers, or jugs, or plates, that had been broken a great while, was because, perhaps, the edges of these might have been rubbed or broken off, so that they could not be fitted close together again. If you recollect, the old woman said to me, when I was tying the broken saucer together, 'Tie it tight, and fit it close, or it will not do.' —— Do you think that I have found out the right reason, mamma? Is it the reason which you thought of?"

"It is the reason," answered his mother, "which I thought of; but my having thought of it, is no proof that it is right. The best way to find out whether this is the cause, is to try it. —— Can you find out yourself, Frank, how you may prove whether this is the reason or not?"

"I would rub the edges of a plate or saucer, after it was broken; and when I had rubbed off little bits of the edges, I would tie the pieces together and boil them in milk: and I would, at the same time, break another bit of the same plate, or saucer; and I would tie the broken pieces together, without rubbing off any of the edges; and I would put it into the same milk, and let it be upon the fire as long, and let it be as long

before I untied it, as before I untied the other broken pieces ; and then we should see whether the rubbing of the edges would prevent the pieces from joining, or not."

Frank's mother told him that he might try his experiment. He tried it ; and he found that the broken bits of the plate, whose edges he had broken off, could not be joined by being boiled in milk ; and two other broken bits of the same plate, which he joined without rubbing off their edges, stuck together, after they had been boiled in milk, very well.

Then Frank said, "Mamma, there is another thing which I should like to try ; I should like to tie the broken flower-pot very tight together, and to fit the pieces closely ; for, the last time I tied it, I did not tie it very tight ; I did not know that I should have done that, till the old woman told me that I should. I think, perhaps, the flower-pot may be mended, because, though it has been broken a great while, the edges of it have never been rubbed, I believe : it has been lying in the press, in your room ; and nobody has ever meddled with it."

"Nobody has ever meddled with it, I believe," said his mother ; "for I lock that press every day ; and no one goes to it but myself ; and I have never rubbed any thing against the edges of the broken flower-pot."

She went and brought the pieces of the

flower-pot; and Frank tied them together, very tight, after he had fitted their edges closely and evenly together. He boiled this flower-pot again in milk, waited afterwards till it became cool, and then he untied it; and he found that the parts stuck together; and he poured water into it, and the water did not run out. Frank was glad that he had mended the flower-pot at last.

"Do you think, mother," said he, "that it was made to stick together again by being tied so tight, or by the milk, or by both together?"

"I do not know," answered his mother; "but you may try whether tying broken pieces of earthenware together will fasten them, without boiling them in milk."

Frank tried this; and he let the pieces that were tied together remain still, as long as those which he had before boiled in milk; and when he had untied the string, the pieces separated; they did not stick together in the least. He afterwards tied these pieces together again, and boiled them in water; and he found, when he untied them, that they did not stick together.

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There was one part of a winter's evening which Frank liked particularly; it was the half hour after dinner, when the window-shutters were shut, and the curtains let

down, and the fire stirred, so as to make a cheerful blaze, which lighted the whole room.

His father and mother did not ring the bell for candles, because they liked to sit a little while after dinner, by the light of the fire.

Frank's father used often, at this time, to play with him, or to talk to him.

One evening, after his father had been playing with Frank, and had made him jump, and run, and wrestle, and laugh, till Frank was quite hot, and out of breath, he knelt down upon the carpet, at his father's feet, rested his arms upon his father's knees, and, looking up in his father's face, he said, "Now, papa, whilst I am resting myself so happily here, will you tell me something entertaining?"

But, just as Frank said the word "entertaining," the door opened, and the servant came into the room with lighted candles.

"O candles! I am sorry you are come!" cried Frank.

"O candles! I am glad you have come," said his father; "for now I can see to read an entertaining book, which I want to finish."

"But, papa," said Frank, "cannot you sit still, a *little, little* while longer, and tell me some short thing?"

"Well, what shall I tell you?"

"There are so many things that I do not

know, papa, I do not know which to ask for first. I want to know whether you have ever seen a camel ; and I want to know where silkworms are found, and how they make silk ; and I want to know how people weave linen in a loom, and how wool of sheep is made into such coats as we have on. And O father ! I wish very much to know how the fat of animals is made into candles.

“ You promised to tell me, or to show me, how that was done. And O ! more than all the rest, I wish to know how plates, and jugs, and cups, and saucers, and flower-pots, are made of clay — and whether they are made of clay such as I have in my garden. And I want very much to know where tea comes from ; and —— ”

“ Stop, stop ! my dear Frank,” said his father ; “ it would take up a great deal more of my time than I can bestow upon you, to answer all these questions. I cannot answer any of them to-night ; for I have a great many other things to do. The first thing you asked me, I think, was, whether I had ever seen a camel. I have ; and the print I am going to show you is very much like the animal that I saw ; and you may read his history ; and then you will know all that I know of camels ; and when you have satisfied your curiosity about camels, I can lend you another book, in which you may read the history of silk-worms.”

"Thank you, papa," said Frank; "I shall like to read these things very much; only I cannot read quick yet, papa; and there are words sometimes which I cannot make out very well."

"If you persevere," said his father, "you will soon be able to read without any difficulty. But nothing can be done well without perseverance. You have showed me that you have a great deal of perseverance, and ——"

"Have I, papa?" interrupted Frank; "when did I show that to you?"

"The morning when you tried, for an hour and a half, to put the joining map together."

"And at last I did put it together."

"Yes; you succeeded, because you persevered."

"Then," said Frank, "I will persevere, and learn to read easily, that I may read all the entertaining things that are in books; and then I shall be as glad when the candles come as you were just now, papa."



# FRANK.

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## PART III.

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FRANK was very fond of playing at battledoor and shuttlecock; but he could not always play when he liked, or as long as he liked it, because he had no battledoor or shuttlecock of his own. He determined to try to make a shuttlecock for himself; but he had no cork for the bottom of it, and he had only five feathers, which belonged to an old, worn-out shuttlecock. They were ruffled and bent. His mother was very busy, so that he did not like to interrupt her, to ask for more feathers; and his father was out riding, so that Frank could not ask him for a cork. His brother Edward advised him to put off trying to make his shuttlecock, till his mother was not busy, and till his father should return from riding; Frank was so impatient, that he did not take this prudent advice. He set to work immediately, to make the bottom of his shuttlecock of one end of the handle of his pricker, which he sawed off, because he thought that it resembled the bottom of a shuttlecock in shape

more than any other bit of wood which he possessed. When he tried to make holes in it for the feathers, he found that the wood was extremely hard ; he tried, and tried, in vain ; and, at last, snap went the end of the pricker. It broke in two ; and Frank was so sorry that he began to cry ; but recollecting that his tears would not mend his pricker, he dried his eyes, and resolved to bear the loss of it like a man. He examined the stump of the pricker, which he held in his hand, and he found that there was enough of the steel left, to be sharpened again ; he began to file it as well as he could ; and, after taking some pains, he sharpened it ; but he did not attempt to make any more holes in the sharp wood, lest he should break the pricker again. He said to himself, " Edward gave me good advice, and I will now take it. I will wait till my father comes home, and till my mother is not busy ; and then I will ask them for what I want."

The next day his father gave him a cork, and his mother gave him some feathers ; and, after several trials, he at last made a shuttlecock, which flew tolerably well. He was eager to try it, and he ran to his brother Edward, and showed it to him, and Edward liked the shuttlecock, but could not then play, because he was learning his Latin lesson.

" Well ! I will have patience till to-morrow, if I can," said Frank.

It happened, this same evening, that Frank was present when his brother Edward, and three of his cousins, were dressing, to act a pantomime. They were in a great hurry. They had lost the burnt cork with which they were to blacken their eyebrows. They looked every where that they could think of for it, but all in vain; and a messenger came to tell them that every body was seated, and that they must begin to act the pantomime directly. They looked with still more eagerness for this cork, but it could not be found; and they did not know where to get another.

“I have one! I have one! I have a cork! you shall have it in a minute!” cried the good-natured little Frank. He ran up stairs directly, pulled all the feathers out of his dear shuttlecock, burnt the end of the cork in the candle, and gave it to his friends. They did not know, at this moment, that it was the cork of Frank’s shuttlecock: but, when they afterwards found it out, they were very much obliged to him; and when his father heard this instance of his good nature, he was much pleased. He set Frank upon the table before him, after dinner, when all his friends were present, and said to him, “My dear little son, I am glad to find that you are of such a generous disposition. Believe me, such a disposition is of more value than all the battledoors and shuttlecocks in the world! you are welcome to as many

corks and feathers as you please: you, who are so willing to help your friends in their amusements, shall find that we are all ready and eager to assist you in yours."

Close to the garden, which Frank's mother had given to him, there was a hut, in which garden tools and watering pots used formerly to be kept; but it had been found to be too small for this purpose, and a larger had been built in another part of the kitchen-garden. Nothing was now kept in that which was near Frank's garden, but some old flower-pots and pans. Frank used to like to go into this hut, to play with the flower-pots; they were piled up higher than his head; and one day, when he was pulling out from the undermost part of the pile a large pan, the whole pile of flower-pots shook from bottom to top, and one of the uppermost flower-pots fell down. If Frank had not run out of the way in an instant, it would have fallen on his head. As soon as he had a little recovered from his fright, he saw that the flower-pot had been broken by the fall, and he took up the broken pieces, and went into the house, to his mother, to tell her what had happened. He found his father and mother sitting at the table, writing letters; they both looked up when he came in, and said, —

"What is the matter, Frank? you look very pale."

"Because, mamma, I have broken this flower-pot."

"Well, my dear, you do rightly to come and tell us that you broke it. It is an accident. There is no occasion to be frightened about it."

"No, mamma; it was not that which frightened me so much. But it is well, that I did not break my own head, and all the flower-pots in the garden house."

Then he told his mother how he had attempted to pull out the undermost pan, and how "the great pile shook from top to bottom."

"It is well you did not hurt yourself, indeed, Frank!" said his mother.

His father asked if there was a key to the door of the hut.

"Papa, there is an old, rusty lock, but no key."

"The gardener has the key; I will go for it directly," said his father, rising from his seat; "and I will lock that door, lest the boy should do the same thing again."

"No, papa," said Frank; "I am not so silly as to do again what I know might hurt me."

"But, my dear, without doing it on purpose, you might, by accident, when you are playing in that house, shake those pots, and pull them down upon yourself. Whenever there is any real danger, you know I always

tell you of it, and it is much better to prevent any evil, than to be sorry for it afterwards I will go this minute and look for the key, and lock the door," continued his father.

"Papa," said Frank, stopping him, "you need not go for the key, nor lock the door; for, if you desire me not to play in the old garden house, I will not play there; I will not go in, I promise you; I will never even open the door."

"Very well, Frank; I can trust to your promise. Therefore, I want no lock and key. Your word is enough."

"But only take care you do not forget, and run in by accident, Frank," said his mother: "as you have such a habit of going in there, you might forget."

"Mamma, I will not forget my promise," said Frank.

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A few days after this time, Frank's father and mother were walking in the garden, and they came to the old garden house, and they stopped and looked at the door, which was a little open. This door could not be blown open by the wind, because it stuck against the ground at one corner, and could not be easily moved.

"I assure you, mamma, I did not forget; I did not open it; I did not go in, indeed, papa," said Frank.



His father answered, "We did not suspect you of having opened the door, Frank."

And his father and mother looked at one another, and smiled.

His father called the gardener, and desired that he would not open the door of the old garden house; and he ordered that none of the servants should go in there.

A week passed, and another week passed, and a third week passed, and again Frank's father and mother were walking in the garden; and his mother said, —

"Let us go and look at the old garden house."

His father and mother went together, and Frank ran after them, rejoicing that he had kept his promise; he never had gone into that house, though he had been often tempted to do so, because he had left there a little boat, of which he was very fond. When his father and mother had looked at the door of the garden house, they again looked at each other, and smiled, and said, —

"We are glad to see, Frank, that you have kept your word, and that you have not opened this door."

"I have not opened the door, papa," answered Frank; "but how do you know that, by only looking at it?"

"You may find out how we know it; and we had rather that you should find it out,

than that we should tell it to you," said his father.

Frank guessed, first, that they recollected exactly how far open the door had been left, and that they saw it was now open exactly to the same place. But his father answered, that this was not the way; for that they could not be certain, by this means, that the door had not been opened wider, and then shut again to the same place.

"Papa, you might have seen the mark in the dust, which the door would have made in opening. Was that the way, papa?"

"No; that is a tolerably good way; but the trace of the opening of the door might be *effaced*, that is, rubbed out, and the ground might have been smoothed again. There is another circumstance, Frank, which, if you observe carefully, you may discover."

Frank took hold of the door, and was going to move it; but his father stopped his hand.

"You must not move the door; look at it without stirring it."

Frank looked carefully, and then exclaimed, —

"I've found it out, papa! I've found it out! I see a spider's web, with all its fine thin rings and spokes, like a wheel, just at the top of the door; and it stretches from the top of the door to this post, against which the door shuts. Now, if the door had been shut or opened wider, this spider's web would have



been crushed or broken ; the door could not have been shut or opened without breaking it. May I try, papa ? ”

“ Yes, my dear.”

He tried to open the door, and the spider’s web broke, and that part of it, which had been fastened to the door, fell down, and hung against the post.

“ You have found it out now, Frank, you see,” said his father.

His mother was going to ask him if he knew how a spider makes his web ; but she stopped, and did not then ask him this ques-

tion, because she saw that he was thinking of his little boat.

"Yes, my dear Frank! you may go into the house now," said his mother, "and take your little boat."

Frank ran in, and, seizing it, hugged it in his arms.

"My dear little boat, how glad I am to have you again!" cried he; "I wish I might go to the river side this evening, and swim it; and there is a fine wind, and it would sail fast."

Frank was never allowed to go to the river side, to swim his boat, without his father or mother, or eldest brother, could go with him.

"Mamma, will you" — said he — "can you be so good as to go with me, this evening, to the river side, that I may swim my boat?"

His mother told him that she had intended to walk another way; but that she would willingly do what he asked her, as he had done what she desired. His father said the same, and they went to the river side. His father walked on the banks, looking till he saw a place where he thought it would be safe for Frank to swim his boat. He found a place where the river ran in between two narrow banks of land; such a place, Frank's father told him, in large rivers, is called a *creek*.

The water in this creek was very shallow; so shallow that you could see the sand



and many colored pebbles at the bottom ; yet it was deep enough for Frank's little boat to float upon it. Frank put his boat into the water — he launched it — and set the sail to the wind ; that is, turned it so that the wind blew against it, and drove the boat on.

It sailed swiftly over the smooth water, and Frank was happy looking at it and directing it various ways, by setting or turning the sail in different directions, and then watching which way it would go.

"Mamma," said he, after his mother had remained a good while, "you are very good-natured to stay with me so long ; but I am

afraid you will not have time to come again to-morrow ; and, if you cannot, I shall not have the pleasure of swimming my boat. Papa, the water is so very shallow here, and all the way along this creek, that, if I was to fall in, I could not drown myself ; and the banks are so close, that I could walk to them and get on dry land, directly. I wish, papa, you would let me come here whenever I please, without any body with me ; then I should not be obliged to wait till mamma had time, or till my brother Edward had done his lesson ; then I could swim my boat so happily, papa, whenever I pleased."

"But how can I be sure that you will never go to any other part of the river, Frank ?"

"You know, papa, I did not open the door, or go into the garden house, after you had desired me not, and after I had promised that I would not ; and, if I promise that I will not go to any other part of the river, you know you can believe me."

"Very true, Frank, and therefore I grant your request. I can trust to your doing what I desire you to do ; and I can trust to your promise. You may come here whenever you please, and sail your boat in this creek, from the stump of this willow-tree, as far in this way towards the land as you please."

Frank clapped his hands joyfully, and cried, "Thank you, papa ! thank you. Main-



ma, do you hear that? Papa has given me leave to come to this place whenever I please, to swim my boat; for he trusts to my promise, mamma."

"Yes, that is a just reward for you, Frank," said his mother. "The being believed another time, and the being more and more trusted, is the just reward for having done as you said that you would do, and for having kept your promise."

"O, thank you, mamma; thank you, papa, for trusting to my promise!" said Frank.

"You need not thank me, my dear, for believing you," said his father; "for I cannot help believing you, because you speak truth. Being believed, is not only the reward, but the necessary consequence, of speaking truth."

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Next morning, at breakfast, Frank's father told him, that, if all the flower-pots were carried out of the old garden house, and if they were removed without being broken, he would give the empty hut to Frank for his own.

"For my own!" cried Frank, leaping from his chair with delight — "For my own, papa! And do you mean that I may new roof it, and thatch it?"

"If you can," said his father, smiling. "You may do what you please with it, as soon as the flower-pots are removed, but not

till then ; they must all be carried to the house at the other end of the garden, before I give you the hut. How will you get this done, Frank ? for you are not tall enough to reach to the uppermost part of the pile yourself : if you begin at the bottom, you will pull them all down, and hurt yourself, and you will break them, and I should not give you the house."

" Papa, perhaps the gardener —— "

" No, the gardener is busy."

Frank looked round the breakfast-table at his brother Edward, and at his three cousins, William, Charles, and Frederick ; they all smiled, and immediately said that they would undertake to carry the flower-pots for him.

The moment they had eaten their breakfast, which they made haste to finish, they all ran out to the old garden house. Edward took a wooden stool, mounted upon it, and handed down carefully the uppermost of the garden pots to his cousins, who stood below, and they carried them into the new garden house.

As all these boys helped one another, and worked with good will, and in good order, the great pile was soon carried away ; so soon, that Frank was quite surprised to see that it was gone. Not one flower-pot was broken. Frank ran to tell his father this ; and his father went out and saw that the garden pots had been safely removed ; and then he gave



the house to Frank, and put the key of it into his hand.

Frank turned to his brother Edward and his cousins, and said, "Edward, how good you and my cousins were to help me!"

"You deserved that we should do this for you," said Edward. "We do not forget how good-natured you were to us about the cork of your shuttlecock. When we were in distress, you helped us; so it was fair that we should help you, when you wanted it."

"Yes," said his father; "those, who are ready to help others, generally find others

ready to help them. 'This is the natural and just reward of good-nature.'

"*Reward!* papa," said Frank; "that word you used several times yesterday, and again to-day, and it always puts me in mind of the time when you gave me my Bewick on Quadrupeds. You gave it to me, do you remember? as a *reward* for having, as you wrote in the book, cured myself of a foolish habit. I recollect, that was the first time I ever exactly understood the meaning of the word *reward*."

"And what do you understand, Frank, by the word *reward*?" said his father.

"O papa! I know very well; for mamma then told me, a reward is something we like, something we wish to have, something — papa, I thought I could explain it better; I cannot explain it in words; but I know what it is. Will you explain it to me again, papa?"

"Do you try first, if you understand what it means; and if you will stand still, and have a little patience, you will perhaps be able to find words to express your thoughts. Try, and do not look back at the dear hut; the hut is there, and will not run away; you will have time enough, all the morning and all the evening, to play in it, and to do what you please with the roof of it. So now stand still, and show me that you can com-

mand your attention for a few minutes. —  
What is a reward ? ”

Frank, after he had considered for a few moments, answered, —

“ A reward is something that is given to us for having done right ; no, it is not always a thing, for though the first reward that was given to me was a *thing*, — a book, — yet I have had rewards that were of a different sort. That was a reward to me yesterday about the boat ; and when you, papa, or when mamma praises me, that is a sort of reward.”

“ It is,” said his father.

“ Papa, I believe,” continued Frank, “ that a reward is any sort of pleasure, which is given to us for doing right. Is it, papa ? ”

“ It is, my dear. Now answer me one or two more questions, and then I will reward your patience, by letting you go to your hut.”

“ I am not thinking of that now, papa ; I will stay and answer as many questions as you please.”

“ Then, what do you think,” said his father, “ is the use of rewards ? ”

“ To make me — to make all people do right, I believe.”

“ True ; and how do rewards make you, or make other people, do right ? ”

“ Why, — ” Frank paused, and considered a little while.

“ Papa, you know I like, and all other

people like, to have rewards, because they are always pleasures ; and, when I know I am to have a reward, or when I hope, even, that I shall be rewarded for doing any right thing, I wish, and try, to do it ; and, if I have been rewarded once, I think I shall be rewarded again for doing the same sort of thing again ; and, therefore, I wish to do it.

“ And even, if I have not had the reward myself, if I have seen another person rewarded for doing something well, I think and hope that, perhaps, I may have the same if I do the same, and that makes me wish to do it. When you gave John, the gardener’s boy, a little watering pot, because he had made a net for the cherry-trees, I remember I wished to make a net too, because I hoped that you would give me a watering pot ; and when mamma praised my brother Edward, and gave him a table, with a drawer in it, as a reward for keeping his room in order, I began to try to keep my room in better order ; and you know, Edward, I have kept it in order, in better order, ever since, papa ; that is all I can think of, about the use of rewards — I cannot explain it better.”

“ You have explained it as well as I expected that you could, Frank. Now run off to your hut, or your house, whichever you please to call it.”

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Frank found that there were holes in the thatch of his house, and that, when it rained, the rain came through these holes and wetted him, and spoiled the things which he kept in his house ; therefore, he wished to mend the thatch. He went to his father, and asked him if he would be so good as to give him some straw.

His father said that he would, if Frank would do something for him which he wanted to have done.

"I will do any thing I can for you, papa," said Frank. "What is it?"

"Look at these laburnums, Frank," said his father. "Do you see a number of blackish, dry pods hanging from the branches?"

"Yes, papa, a great number."

"Do you know what those pods contain?"

"Yes; little, black, shining seeds; the seeds of the laburnum-tree."

"I want to have all those seeds, that I may sow them in the ground, and that I may have more laburnum-trees. Now, Frank, if, before the sun sets this evening, you bring me all those seeds, I will give you straw enough to mend the thatch of your house."

"Thank you, papa. I will work very hard, and gather them as fast as I can."

Frank ran for his basket, and began to pluck the pods from the lower branches of one of the laburnums. Soon he had filled his basket

with the pods ; and then those which he tried to cram in at the top of the basket sprang up again, and fell over the sides ; so he began to make a heap on the ground of the pods which he afterwards pulled from the tree. When he had finished gathering all that he could reach from the lower branches of one tree, he went to the lower branches of the next, and made a heap under that tree ; and so on. There were nine laburnum-trees ; and when he had got to the ninth tree, and was pulling the seeds from that, he heard a rustling noise behind him ; and, turning round, he saw Pompey, the little dog, dragging the laburnum seeds about in his mouth.

“ O Pompey ! Pompey ! let those alone ! ” cried Frank.

But as fast as he drove him from one heap, Pompey ran to another, and scratched and scattered about the heaps with his feet, and snatched up the pods in his mouth, and scampered with them over the garden, while Frank ran after him ; till at last he caught the dog ; and, in spite of Pompey’s struggling, carried him out of the garden, and shut the door. When he had put Pompey out, he collected all his pods together again ; and, just when he had done so, the gardener opened the garden door, and Pompey was squeezing in between the gardener’s legs ; but Frank called aloud, to beg that the gar-



dener would keep him out ; and, every time any body opened the garden door, Frank was obliged to watch, and to call to them, making the same request. This was so troublesome, and interrupted him so often, that Frank thought it would be better to carry his heaps of pods into his garden house, and lock the door, so that Pompey could not get in to pull them about. Frank carried the heaps, dropping many pods by the way, and going backwards and forwards so often, that this took up a great deal of time. He heard the clock strike three.

“Three o’clock already !” said Frank to himself, looking at the number of pods which hung on the upper branches of the laburnums. “How much I have to do, and how little I have done ! O Pompey ! Pompey !

you don't know the mischief you have done me," said he, as the dog squeezed his way in, when the gardener again opened the garden door.

"Indeed, master," said the gardener, "I cannot keep him out."

"Well, Pompey, come in! you cannot do me any more harm. Now you may run snuffling about the garden as much as you please, for my seeds are safe locked up."

But, though the pods were safe, yet it wasted Frank's time sadly to lock and unlock the door every time he had a fresh basket-full to throw into the house; and he was obliged to keep the basket hanging always upon his arm, lest Pompey should get at it. Frank lost time, also, in jumping up and down every five minutes from the stool, on which he was obliged to stand to reach the pods from the higher branches, and moving his stool from place to place took up time. Presently, he had gathered all that he could reach when standing upon the stool, even when he stood on tiptoe, and stretched as far as he could possibly reach. Then there was time lost in fixing a step-ladder, which his father lent to him, upon condition that he should never get upon it till he had fixed it quite steadily, and had put in a certain prop, all which required some minutes to settle properly. The running up and down this ladder, with his basket, continually, as it

was filled, tired Frank, and delayed him so much, that he got on with his business very slowly, though he worked as hard as he could.

The morning passed, and the evening came ; and, after dinner, Frank jumped from his chair as soon as the table-cloth was taken away, and said he must go to his work, for that he was afraid he should not be able to finish it before sunset. His brother Edward and his three cousins said that they would help him, if his father had no objection. His father said that he had no objection ; that he would be glad that they should help Frank, because he had worked hard, and had been so good humored when the little dog had hindered him.

Frank ran to the laburnum-trees, followed by his brother and cousins, rejoicing. As he went, he said, "Now we shall get on so quick ! as quickly as we did when you all helped me to move the flower-pots."

"Yes," said Edward, "and for the same reason."

"Yes, because there are so many of us," said Frank.

"And for another reason," said Edward.

"What other reason ?"

"Look, and you will see," said his father.

Then Edward settled, that each person should do so, that they might each do what they could do best, and that they might help

one another, and do what they wanted, as quickly as they could. Edward was to stand upon the ladder, because he was the tallest, and he could reach most easily to the uppermost branches of the tree ; he was not obliged to run up and down the ladder, to carry the seeds ; because Frank was appointed to collect and carry the pods off, as fast as Edward gathered and threw them to the ground. Frederick and William sat on the grass at the door of the hut, where the great heap had been collected ; and it was Charles's business to supply them with pods, from which they shelled the seeds. As soon as Edward had finished pulling all the seeds from the trees, he joined Frederick and William, and helped to *shell the seeds* — that is, to pick them out of the pods ; and as soon as Frank had brought from underneath the trees all the pods that had been thrown there, he was set to open the pods, ready for the pickers ; and Charles, who had by this time brought out all that were in the hut, was now employed constantly in collecting and throwing into a heap the empty husks ; because it was found, that time had been lost in searching the empty husks, which had been often mistaken, at first sight, for full pods.

“ Ay,” said Frank, “ now I see the other reason that you meant, Edward ; I see why we go on so quickly and well ; because each



person does one thing, and the thing he can do best ; so, no time is lost."

No time was lost. And they finished their work, had the laburnum seeds shelled and collected in a brown paper bag, and all the rubbish and husks cleared away, just as the sun was setting.

"Here are mamma and papa coming to see if we have done!" cried Frank; "and we have done. Come, papa; come as quickly as you please; here are the seeds all ready! But do you know, papa," continued Frank, as he put the bag of seeds into his father's hands, "it was as much as ever we could do? for I lost so much time this morning. It was all we could do to make up for it this evening. And, though there were so many of us, and though we all went on as fast as we could, I am sure we should never have finished it in time if we had not managed as we have done."

His father asked him in what manner they had managed. Frank explained, and showed how they had divided the work among them, so as to save time. His father told him that manufacturers and workmen, who are obliged to do a great deal of work in a short time, always, if they are wise, help one another, and save time, in the same manner that he and his brother and cousins had done. "And this," added he, turning to Edward "this is what is called *the division of labor*.

“In making this pin,” continued he, taking a pin from Frank’s mother, — “in making a pin, eighteen different workmen are employed. In a manufactory for making pins, each workman does that part which he can do best. One man draws out the wire, of which the pins are made ; another straightens it ; a third cuts it ; a fourth grinds it at the top, ready to receive the heads. To make the heads, requires the different work of two or three men. Another man’s business is to put on the heads ; another’s, to sharpen the points ; and sticking the pins in the papers is a business by itself. Now, one workman, if he was to try to make a pin, without any assistance from others, could not, probably, make a single pin ; certainly he would not be able to make twenty in a day. But, with even nine men to assist him, dividing the labor amongst them, as I have described to you, they could, altogether, make forty-eight thousand pins in a day ; so that each of the ten men might be reckoned to make four thousand eight hundred pins.”

“Ten men make forty-eight thousand pins in a day !” cried Frank ; “and one man four thousand eight hundred pins ! O papa ! is this true ?”

“Yes, I believe it is true,” said his father. “When we go in, your brother Edward shall read to us an account of this, if he likes it

from the book in which I read it.\* But, Frank, look! what comes here!" added his father, pointing to a laborer, who now came into the garden with a great bundle of straw. "Where would you like to have it put?"

Frank chose to have it in his garden house; and his father ordered that it should be put there. Then Frank thanked his brother and cousins for helping him so kindly; and he said, that he thought he should never forget the advantage of *the division of labor*.

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Some time ago, Frank had told his father that he would *persevere* in trying to learn to read, that he might be able to employ and to entertain himself. He did as he said that he would do. He *persevered*, till he had learned to read quite easily. Then

\* "I have seen a small manufactory of this kind," (viz., of pin-making,) "where ten men only were employed, and where some of them, consequently, performed two or three distinct operations. But, though they were very poor, and therefore but indifferently accommodated with the necessary machinery, they could, when they exerted themselves, make, among them, about twelve pounds of pins in a day. There are, in a pound, upwards of four thousand pins, of a middle size. Those ten persons, therefore, could make upwards of forty-eight thousand pins in a day. Each person, therefore, making a tenth part of forty-eight thousand pins, might be considered as making four thousand eight hundred pins in a day. But, if they had all wrought separately and independently, and without any of them having been educated to this peculiar business, they certainly could not, each of them, have made twenty, perhaps not one pin in a day; that is, certainly, not the two hundred and fortieth part of what they are at present capable of performing, in consequence of a proper division and combination of their different operations."—*Smith's Wealth of Nations*, vol. i. p. 6, quarto ed

he read, in books which his mother lent him, accounts of the camel; of which, ever since he had seen the print of it, he had wished to know the history. He read, also, entertaining accounts of the elephant, and of many other animals. In the books which were lent to him, he read only what he could understand; when he came to any thing that he did not understand, he asked his father or mother to explain it to him. If they had not time to attend to him, or to answer his questions, he went on to some other part of the book, which he could understand; or he left off reading, and went to do something else. Whenever he felt tired of reading, or whenever he wanted to hear or see something that was going on in the room with him, and found that he could not attend to what he was reading, he always shut the book and put it away; he never kept the book before him when he was tired, or sleepy, or when he was thinking of something else.

So Frank became very fond of reading.

He could now employ himself happily on rainy days, when he could not run out of doors, or when he had no one to talk or to play with in the house. At night, when the candles came, and when all the rest of the family began to read, Frank also could read; and he said, —

“Papa, now I am as happy as you are

when the candles come ! Thank you, mamma, for teaching me to read."

His mother gave him a book called "*The Book of Trades.*" When she gave it to him, she said to him, —

"Frank, there are many parts of this book which you cannot yet understand ; but you will, I think, be entertained by looking over the prints of the men and women at work at their different trades, and you will understand some of the descriptions of what they are doing."

Frank thanked his mother, and he looked over all the prints in the four volumes of this book. He looked at each print carefully, and examined every thing in it before he turned over the leaf, to look for another.

He was pleased with the print of the chandler, making candles ; and of the shoemaker, making shoes ; and of the turner, turning at his lathe ; and of the rope-maker, making ropes ; and of the weaver, working at his loom. After he had looked at these prints, he read some of the explanations and descriptions, in hopes that he should be better able to understand the prints. He began with the chandler, who, as his mother told him, is a person who makes candles ; and Frank was curious to know how candles are made. But there were several words, in this account of candle-making, of which he did not know the meaning ; and there was one

whole sentence, about *bales of cotton performing quarantine*, which puzzled him sadly. His mother explained to him several of the words which he did not understand ; but she told him, that she could not then explain to him what was meant by *performing quarantine* ; and that he could understand how candles were made, without having this sentence explained to him.

“Mamma,” said Frank, “I do now know pretty well how they are made ; but I think I should understand it all a great deal better, if I were to see it done. Mamma, I wish I could see somebody making candles.”

A few days afterwards, Frank’s mother called him to her, and told him that the cook was going to make some candles. “Should you like to see them made, Frank ?”

“Yes, very much indeed !” said Frank ; “thank you, mamma, for calling me.”

Then his mother took him to the room where the cook was preparing to make mould candles. The first thing he saw was a large saucepan, which the cook had taken off the fire to cool. Frank asked what was in the saucepan. He was told that it was full of melted mutton-suet. Some suet, which had not been melted, was shown to him ; he said that it looked like cold fat, and he was told that this suet was the fat of mutton.

The next thing which Frank saw was a wooden frame, or stand, about the height of



a common table. In this stand were a number of round holes, through each of which hung a tube, or hollow pipe, of pewter, the size of a candle. These hollow pipes were taper; that is, narrower at one end than at the other, and growing narrower and narrower by degrees. The largest ends were uppermost, as the pipes hung in the frame; so that they looked like the shape of candles, with the part that is usually lighted hanging downwards; at the narrow end, these pewter tubes were made in the shape of the top of a tallow candle, before it is lighted.

"Mamma, I know what this is!" cried Frank; "and I know what it is for. It is the same sort of thing which I saw in the print of the tallow chandler, in the Book of Trades. These pipes are the moulds in which the candles are to be made; the melted stuff—the melted suet—is to be poured into this open mouth, and it runs all the way down, down. Then it is left to cool, and then it is pulled out, and the candle is made; this broadest end is the bottom of the candle, which is to go into the candlestick, and this narrow end the top; it is hanging upside-down now. You see I understand it all, mamma!"

"Stay, Frank; do not be in such a hurry; do not be too quick. You do not understand it all, yet. You have not observed or discovered some things, in these moulds, which are necessary to be known; and you have

forgotten the most material part of a candle."

"What can that be, mamma? Tell me, pray."

"I would rather that you should think, and find it out for yourself, Frank."

Frank considered a little, and then answered, —

"Mamma, I have thought of every thing, and I can think of nothing else. Here are the moulds, and the melted grease, which is to be poured into the moulds, to make the candle. What can be wanting?"

"How would you light the candle?" said his mother.

"By the wick, to be sure! O the wick! I forgot the wick! Where is the wick? What is the wick made of?"

"It is made of cotton. Look here, master!" said the cook, showing him a ball of coarse cotton.

"And how do you get this cotton into the middle of the candle?"

"That I will show you, sir," said the cook.

She then took one of the candle-moulds out of the wooden frame, in which it hung; and Frank looked at the narrow end, which had hung downwards, and he saw, at the bottom, a little hole; and he said, —

"Here is a little hole; this must be stopped, or else all the melted tallow will run through it. Shall I stop it up with this bit

of paper, mamma? I will roll it up and make a stopper, shall I?"

"No, thank you, master!" said the cook.  
"You shall see how I will stop it up."

Then she doubled the cotton, which she held in her hand; and she cut off as much as would reach from one end of the candle-mould to the other, and a little more. Then she put the cotton, just where she had doubled it, in at the broadest end of the mould, and she let it fall all down the pipe, to the small hole, at the narrow end; and by means of a wire, she drew the cotton through the hole, leaving a loop of cotton, as long as that which is commonly seen at the wick of a tallow candle which has not been lighted. Then she stuck a peg of wood into the little hole; this peg, together with the cotton which had been put through the hole, stopped it up completely, so that none of the melted tallow could run through it. She next tied the other ends of the cotton together, and put a small bit of wood, like a skewer, through the loop which she had made by tying the cotton together. This skewer lay across the broad end of the mould, and fitted into two notches, in the outer rim of the mould, at opposite sides. The cotton was now tight in the mould, from top to bottom. Frank looked into the mould, and saw that it was so.

"Cook, why are you so careful to make

the cotton tight, and to put it just in the middle of the mould ? ” said Frank.

“ That the wick of *my* candle may be in the middle,” said the cook. “ In good candles, the wick must always be in the middle.”

When the cook had put cotton, in the same manner, into all the moulds, she was ready to pour the melted tallow into them. Frank was afraid that the tallow had grown cold, because the saucepan, in which it was, had been taken off the fire some time. But the cook said, it was quite warm enough ; that it would not make good candles if it was very hot. As Frank now went close to the large saucepan, he saw that there was a smaller saucepan withinside of it. The smaller saucepan held the melted tallow ; and, between the large and the smaller saucepan, the space was filled with water ; both at the sides and at the bottom, between the small and large saucepan, there was water. Frank asked the reason of this.

The cook answered, “ Master, it is to hinder *my* tallow from burning, or being made too hot ; which would spoil it, as I told you.”

“ But how does the water hinder the tallow from being made too hot ? for the water is hot itself, is it not ? ”

“ It is, master ; but still it keeps the tallow from being *too* hot ; I can’t say how ; but I know it is so, and I always do it so.”



"But I ask the reason; I want to know the reason, mamma," said Frank.

"I will endeavor to explain the reason to you some other time, my dear," said his mother; "but, first, let us look at what the cook is doing, that you may not miss seeing how candles are made."

Frank looked, and he saw the cook replace all the pewter moulds in the wooden frame, with the narrow ends downwards, and the broadest ends uppermost; and into the open mouth of the broadest end, which was uppermost, she poured, carefully and slowly, the

melted tallow, from the spout of the saucepan, into each of the candle-moulds. She poured it not over the cotton, at the top, but on each side of it, so as to leave the cotton, and the skewer that was put through it, standing above the grease, when the mould was filled nearly to the top. When this was done, the cook said that they must leave the tallow to cool ; and that it would be some time before it would be cool.

Frank went away with his mother, and he asked her if she could now answer the question about the hot water. But just then his father called her, and she had not time to answer Frank.

She was busy the rest of the morning, and Frank went to his garden, and worked in it : when he was tired of working, he trundled his hoop upon the walk, and kept it up till he was tired of running after it. It began to rain ; and then he went into the house, and learned by heart some of the multiplication table, which his mother had desired him to learn.

Some company dined, this day, with his father and mother ; and his mother could not talk to him again till after the company had gone away, in the evening. Frank was glad when the company was gone, and when his mother had again time to attend to him.

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The next day, Frank asked his mother to take him to look at the candles ; he said that he hoped the cook had not taken them out of the moulds, for he wished to see that done. The cook had not taken them out ; for his mother had desired that she should not do this till Frank should be present. The first thing the cook did was to pull out the pegs, which she had stuck between the cotton of the wick into the little holes, at the smallest end of the moulds ; then she took hold of the cotton loop, through which the bit of stick had been put, at the larger end of the mould, and she drew it up gently ; and with the cotton came the tallow, out of the mould, in the shape of a candle ; and as it came out, Frank exclaimed, —

“It is a real candle, indeed ! Shall we light it, mamma ? ”

“Not yet, my dear. It is not hard enough. It must be hung up for two or three days, before it will be fit to be used.”

The cook drew all the candles out of the moulds, and she hung them up to harden.

“Well, now, mamma, I have observed carefully all that has been done ; and I have not been too quick, have I ? I have learned something *accurately*, as you say. Now I know how to make candles ! ”

“You have seen how candles are made, that is, you have seen how mould candles are made. These are called *mould candles* be-

cause they are made in a mould ; but there are other ways of making candles."

" Yes, I remember the man in the Book of Trades says, that there are dipped candles, as well as mould candles."

" Yes, master," said the cook ; " the dipped candles are made by dipping the wick into the tallow, then letting it dry, and then dipping it, again into the tallow ; and every time, more and more sticks to the candle ; and it is left to dry, between every dipping ; till, at last, it is the size the candle should be. Then, besides dipped candles, and mould candles, there are rushlights, master ; such as the poor people use here, in their cottages, you know."

" I do not know," said Frank. " Tell me, what are rushlights ? Are they made of rushes ? "

" Yes, sir."

" O, tell me how they are made ! "

" If I can, I will take you this evening to the cottage of that good-natured old woman who showed you her spinning-wheel," said Frank's mother ; " and I will ask her to show you how rushlights are made."

" Thank you, mamma. Are there any other sorts of candles ? "

" There is another sort, which you have seen, and that is not made of tallow."

" I recollect — wax candles, mamma."

" They may be made nearly in the same

manner that dipped tallow candles are made — only that melted wax is poured over the wick, instead of the wick being dipped into the wax. The wax candle is rolled upon a smooth table, to make it smooth and round. There are other ways of making wax-candles ; but I will not tell you any more at present, lest you should not be able to remember all that you have seen and heard."

"But, mamma, tell me one thing more," said Frank, as he followed his mother up stairs. "Wax, I know, is made by bees, and wax candles are made of wax ; but there is another kind of wax candle, or of candle that looks like wax. It has a long, hard name, which I cannot remember."

"Do you mean spermaceti ?"

"Yes — spermaceti. What is that ?"

"Spermaceti is a fatty substance prepared from the brain of a species of whale. You have seen the print of a whale, and have read an account of a whale ?"

"Yes ; the great fish — the largest of fishes — I remember : I never should have guessed that candles were made from any part of a fish. Mamma, what a number of things we must know, before we can know well how any one thing is made, or done."

"Very true, my dear little boy ; and I am glad to see that you wish to acquire, or get knowledge."

His mother could not talk to him any more

this morning ; but, in the evening, she called him, and said, " Now, Frank, you may walk with your father and me to Mrs. Wheeler's cottage."

" To the good-natured old woman's ? O, I am glad of that, mamma ! " said Frank.

He ran for his hat, and he was ready in an instant ; for he was happy to go with his father and mother. It was a fine evening, and the walk was pleasant, through pretty paths, in green fields ; and there were several stiles, which Frank liked to get over. He showed his father how quickly he could get over them.

" Look, papa, how well I can jump ! how I can *vault* over this stile ! You know, you said that men ought to be active ; now, papa, am not I active ? "

Frank ran on, without waiting for an answer ; and he ran till he came to a rivulet, or a little river, or brook, which crossed the path. There he stopped, and stood still, for there was only a narrow plank, or board, across the stream ; and the hand-rail, by which Frank used to hold when he walked over, had been broken since he had last been at this place. The rail had fallen into the water, and there was nothing by which Frank could hold. His father and mother came up to him.

" Frank," said his father, " what is the matter ? You look very melancholy."



"Yes, papa ; because I am afraid we must turn back. We cannot go on."

"Why not, my dear ? "

"Look at this broken bridge, papa — "

"Broken hand-rail of a bridge, you mean, Frank. The bridge is not broken. This plank is as broad and as strong as it was before ; and you know you have walked over it safely. You see it will bear my weight, and I am much heavier than you are," said his father, standing on the plank.

"Yes, papa ; so I see."

"And you see," said his father, walking over the bridge, — "you see that I can walk over it, though there is no hand-rail."

"Yes, papa, so I see," said Frank ; but he stood still, without attempting to follow his father.

"Come on, my boy," said his father ; "unless you mean to stand there all night."

"No, papa — yes, papa. — Mamma, will you go first ?"

His mother went over the bridge ; still Frank felt afraid to follow ; but when his father said, "Men ought to be brave ; boys should conquer their fears," Frank tried to conquer his fear ; and he put his foot upon the bridge, and his father held out his hand to him, and he walked on, slowly at first, and quicker afterwards, till he got quite across. Then he said, —

"Papa, I will go back again, and do it better."

He went back again, and walked quite stoutly over the plank ; his father holding his hand. And then he said, —

"Papa, I will do it without holding your hand."

So he did. And he went backwards and forwards two or three times, till he had quite conquered his fear. Then he felt glad and pleased with himself, especially when his mother smiled upon him, and said, —

"That is right, Frank, my dear. This puts me in mind of a little boy who conquered his fear, as you have done."

"Who was that, mamma ?"



“A little boy, who was younger than you are.”

“Was it a real boy, mamma? — And is it a true story?”

“It is a true story, of a real boy. He was about five years old.”

“Much younger than I am!” cried Frank. — “Well, mamma.”

“When this little boy was taken to the sea-shore, to be bathed, for the first time, in the sea, he was afraid, when he saw the wave of the sea coming, and when he felt it going over him.”

“So should I have been, I dare say, mamma.”

“But he was ashamed of having been afraid, and he was determined to conquer his fear; and he turned to the sea, and said, ‘Wave, do that again! Wave, come over me again!’ And the next time he showed no fear.”

“What was the name of the boy, mamma, and who were his father and mother?”

“I cannot tell you their names, my dear; but I can tell you that the boy is son to the greatest general, the greatest hero, in England.”

“The greatest hero? O! then I know who he is, mamma.”

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When they came to Mrs. Wheeler’s cot-

tage, Frank's father went into a field, near the house, with the old woman's son, to look at a fine crop of oats; and Frank's mother took him into the house, where they found Mrs. Wheeler getting ready her grandson's supper. She stopped doing what she was about, when she saw Frank and his mother. She looked glad to see them, and said — "You are welcome, madam; you're welcome, master; be pleased to sit down." Then she set a chair for *madam*, and a little stool for *master*, and she swept the hearth quite clean; and she called to a little girl, of about six years old, who was in the room, and bade her run to the garden, and gather some strawberries, and bring them in for Frank. Frank thanked this good-natured old woman; but he said, —

"I did not come to beg strawberries; and, though I love strawberries very much, I do not wish to have any of yours, because I believe you have but very few for yourself. What I want you to do for me is to show me how you make rush candles."

"That I will with pleasure, master," said Mrs. Wheeler.

"But, Mrs. Wheeler, first finish what you were about when we came in," said Frank's mother; "I believe you were getting ready your supper."

"It is George's, my grandson's supper, madam."

"Then it is not fair, that your George should lose his supper because my Frank wants to see rushlights made," said Frank's mother, smiling:

"That is true," said Frank; "and I dare say, that her George, mamma, will be very hungry when he comes in, for I saw him working hard in the fields; and I am always very hungry when I have been working hard. Pray, Mrs. Wheeler, finish getting ready George's supper. I can wait as long as you please; and I wish I could do something for you, as you are going to do something for me. Let me carry those sticks to the fire — I can do that — and you may go on with your cooking."

"God bless you, master;" said the old woman; "but this is too great a load for your little arms."

"Let me try," said Frank.

"Yes; let him try," said his mother; "he loves to be useful."

"And I am useful too!" cried Frank, carrying the great bundle of sticks to the fire.

His mother began to show him how to put them on the fire.

"But," said she, "some of these are wet, and they will not burn readily."

"Ay," said the old woman. "I am afraid that is a wet bundle. I took it from the wrong place; yonder, in that corner, are all the dry fagots."

Frank had never heard the word *fagots* before, and he did not hear it quite plainly now ; but he saw what the old woman meant, because she pointed to the place where the fagots lay. So he ran directly for another bundle of sticks, and he carried it towards the fire ; and, throwing it down beside his mother, said, —

“ There, mamma, there’s another *maggot*, and a dry *maggot*, for you ! ”

“ Fagot, not *maggot*, ” said his mother.

“ Maggot ! ” cried the old woman, laughing, with her arms akimbo ; “ Lord bless him ! don’t he know the difference between a maggot and a fagot ? ”

“ What is the difference ? ” said Frank.

“ Why, master ! — a maggot ! — Lord help us ! ” — the old woman began, as well as she could speak while she was laughing.

“ Mamma, ” said Frank, turning to his mother, “ Mamma, I would rather you would tell me ; because you will tell me without laughing at me. ”

The old woman, who saw that Frank did not like to be laughed at, but who could not stop herself, turned her back, that he might not see her ; but he saw her sides shaking all the time his mother was explaining to him the difference between maggot and fagot.

“ A maggot is a small worm ; and a fagot is a bundle of sticks. ”

"Yes, mamma," said Frank.

"Well, Frank, now I have told you, can you tell me, what is a maggot and what is a fagot?"

"A maggot, mamma, is —— Mamma, I did not hear; I could not attend to what you said, because ——"

The old woman walked out of the room, and stood laughing in the passage.

"Mamma," whispered Frank, "I shall not call Mrs. Wheeler my good-natured old woman any more, because she is laughing at me."

"Then, Frank, I am afraid I cannot call you my good-humored little boy any more. What harm does her laughing do you, Frank? Let us see — has it broken any of your bones?"

"No," said Frank, smiling; "but I don't like to be laughed at much; especially for not knowing any thing."

"Then, to avoid being laughed at again for the same thing, had not you better learn that which you did not know?"

"I had. Now, mamma," said Frank, turning his back to the door, so that he could no longer see Mrs. Wheeler — "now, if you will be so good as to tell me again, I will attend, if I possibly can; but I was so much ashamed, mamma ——"

"My dear," said his mother, "there is

nothing shameful in not knowing the meaning of words which you never heard before. When you have not done any thing wrong or foolish, never mind being laughed at ; a man should never mind being laughed at for a trifling mistake."

"Mamma, I will never mind. — Tell me now, and I will show you I never mind."

His mother repeated to him the explanation of the two words ; and as soon as he knew this, he ran to the door, and called out very loud, —

"A maggot is a small worm ; and a fagot is a bundle of sticks ! You need not laugh any more, Mrs. Wheeler."

"O master ! I ask your pardon ; I will not laugh any more ; I was very rude ; I ask your pardon. But I'm foolish, and could not help it ; I hope you are not angry, master. I hope," said Mrs. Wheeler, coming back into the kitchen, and courtesying, "you are not angry, madam."

"Mamma is not angry at all," said Frank, "and I was only a little angry ; and it is over now. Come in, come in," said he, pulling her by the hand, "and look how well the fire is burning, that I and mamma — that mamma and I made."

"Bless your little soul, that forgives and forgets in a minute !" said the old woman



"I wonder Hannah is not in with the strawberries."

"I don't want the strawberries yet," said Frank; "you have not put the pot on the fire, to boil the supper for George. Won't you put it on now?"

# FRANK.

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## PART IV.

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MRS. WHEELER put the pot on, and, while the supper was boiling for George, she showed Frank how to make rushlights. First, she took down from a hook, on which they hung, a bundle of rushes. Frank had seen rushes growing, in a field near his father's house ; and he had gathered some of them, and had peeled them ; and he knew that, in the inside of the rush, there is a white, soft substance, called pith. But when he had attempted to peel rushes, he had always been a great while about it, and he had seldom been able to peel more than about the length of his finger of the rush without breaking the white pith. Mrs. Wheeler in an instant stripped the rush of its thick green outside, all except one narrow stripe, or rind, of green, which she left to support the soft pith ; and she peeled, without breaking it, the whole length of the pith contained in the rush, which was almost as long as Frank's arm.

"Can you guess, Frank, what part of a candle this rush is to be?" said his mother.

Frank thought for a little while, and then answered, that he supposed the rush would be made into the wick of the candle, and that it would serve instead of the cotton which he had seen used by the cook in making mould candles.

"Yes, master, you have guessed right," said Mrs. Wheeler.

Then she brought from a corner near the fire a gresset, or small pan, in which there was melted grease. Frank gave the rush to her, to dip into it; but she said that it would not make a good rush candle, because it had not been left to dry for some days. She took another peeled rush from a bundle which hung up in a press by the fireside. This, which had hung there, as she said, for two or three days, was drier, and less white, than that which had been freshly peeled; she drew the rush through the melted grease, and she said, —

"It will be cool, and fit to burn, in about five minutes."

In about five minutes it was cool, and the old woman lighted it, and it burned; but there was so much daylight in the room, as the setting sun was shining full upon the window, that the light of the small rush candle could scarcely be seen. Therefore Mrs. Wheeler took it into another room, at the op-

posite side of the house, where the sun did not shine at this time. There, when she had shut the shutters, the flame of the rushlight was plainly seen. Frank observed that this rush candle did not give nearly so much light as a thick tallow candle did. Mrs. Wheeler said, that she could not afford to buy tallow candles often, and that these rushlights were enough for her. Frank perceived that, after he had been a little while in this room, he could see the things in it better than he did when the shutters were first closed, and when his eyes had been dazzled by the sunshine. He was surprised to find that he could make out the words at the bottom of a print to which the old woman held the light.

“Mamma, I could scarcely see it before, and now I can see it quite plainly, and I will read it to you.”

He read aloud, —

“For want of a nail, the shoe was lost ;  
For want of a shoe, the horse was lost.”

Just as Frank got to “*the horse was lost,*” the rushlight was burnt out.

“O, is the candle gone so soon ?” cried Frank. “Mamma,” continued Frank, turning to his mother, whilst Mrs. Wheeler opened the shutters, “Mamma, you know such a candle as that would last, at home, the whole night ; several hours a rush candle lasts at home, mamma.”

"Do you think that the candles being *at home* makes any difference as to their burning?" said Frank's mother, smiling.

"No, no, mamma," said Frank, laughing; "I know that the rush candles, which we have at home, would burn as long a time here as they do at our house. But I mean that ours burn longer, because there is more grease, or tallow, about them. Mamma, if there was no tallow about this rush, would it burn at all? or would it burn away a great deal sooner than it does now?"

"Try, and you will see, my dear," said his mother.

Mrs. Wheeler gave Frank a peeled rush, and he lighted it at the fire, and it burned; but the flame was not bright, and it soon went out. Frank dipped it into the grease, and it burned better. Mrs. Wheeler went to see if George's supper was ready; and Frank continued talking to his mother:—

"Mamma, I believe it is the melted grease that burns, and makes the bright flame of the candle; but I do not know how. Mamma, what becomes of the grease, or the tallow, when the candle burns?"

"Do not you see the smoke that rises from the top of the flame?" said his mother.

"Yes, mamma, I see the smoke; but what has that to do with what I asked you?"

"Do you not know what that smoke is?"

Do not you remember your father's showing you, one evening after tea, the difference between smoke and steam ? ”

“ I remember, mamma, steam comes from water, when it is made hot ; I remember papa showed me the steam, the vapor rising from the hot water in the tea-urn ; and I recollect papa held a cold plate over it, and showed me that the cold turned the vapor back again into water ; I saw the drops of water *condensed* ; I remember the word. And I recollect he afterwards held a plate over the candle, and said that what rose from the candle was smoke, not steam ; I do not remember about the smoke ; I recollect only that the plate was blackened which was held over the candle, and that the plate was not wet ; but I do not know exactly how it was.”

“ Did you never hear any thing more about smoke ? ” said his mother.

“ O yes ! I recollect papa told me that smoke, when cold, became soot, and fell down to the ground, or stuck to any cold thing that was near it.”

“ Just so the smoke of the candle is the vapor of melted tallow, which boils by the heat of the candle ; and when this vapor is *condensed* by cold, it becomes soot, such as you see sticking to the ceilings, where many candles are used ; soot is frequently collected, on purpose, upon plates held over lamps, and is then called lampblack.”



"Mamma, once I saw, in the little, little barrel, at the time the painter was going to paint the black board, at the bottom of your room, some light, black powder. Was that lampblack?"

"Yes, my dear, that was lampblack; and it is used for paint, and for making blacking for shoes and boots."

"Very well, mamma, I understand that; but I want to go back to the candle; the melted tallow — the vapor of boiling tallow — makes the candle burn, and keeps the candle burning. Mamma, I do not know how, and why, the candle burns. And what is the flame?"

"Frank, till you have more knowledge, I will not attempt to explain that to you," said his mother. "But, whenever you can understand it, you shall read all that is known about the burning of a candle. You will find it in that book which your brother Edward was reading yesterday — 'Conversations on Chemistry.'"

"Ay, that book which he likes so much. But, mamma, I do not like it. Edward said to me, 'Don't interrupt me, Frank; I am busy; I am very happy, reading this.' Mamma, I got up behind his chair, and began trying to read over his shoulder; but I did not like the book much."

"No, because you did not understand it at all."

"And I am afraid I shall never understand it," said Frank.

"Do you not understand parts of books now, Frank, which you did not understand when you began to learn to read?"

"Yes, parts of 'Evenings at Home,' and parts of 'Sandford and Merton,' which I did not understand, and did not like, last year; and now I like them very much."

"Then you may hope that the time will come, if you try to improve yourself, when you will understand and like 'Conversations on Chemistry,' as your brother now does. Even what you have seen and learned this evening will help you a little."

Just then, Frank looked out of the window, and he saw the little girl, who had been sent for strawberries, coming along the path which led to the house. She brought a basket of fine strawberries. The old woman set a little deal table in the porch, where the honeysuckles, which hung over the roof of the porch, smelled very sweet. The sun was setting, and it was cheerful and pleasant.

"Look, master Frank! I have strawberries for you, and for myself, too!" said Mrs. Wheeler. "My George takes care of my garden, and I have plenty of fruit and flowers; these honeysuckles, that smell so sweet, are all his planting."

Frank's father returned from the oat field, where he had been; and Frank and his

father and mother sat in the porch covered with honeysuckles, and ate strawberries and cream.

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After Frank had eaten as many strawberries as he liked, he and his father and mother thanked the good-natured old woman, and his mother put into the little girl's hand some money. The girl courtesied, and smiled, and looked happy.

Then Frank followed his father and mother out of the cottage, and his father said, that they would walk home by a new way, through the oat field, and afterwards through a neat farm-yard, and round by a pretty lane, which would take them to the bridge. Frank did not hear what his father said; and his father, turning his head back, saw Frank walking slowly behind him, and looking as if he was thinking intently of something.

"What are you thinking of, Frank?" said his father.

"I am thinking, papa, about money."

"What about money, Frank?"

"I am thinking how happy that little girl looked when mamma gave her some money, and how glad people always look when money is given to them. The reason, I know, is because they can buy things with money — bread and meat, or clothes, or balls and tops, and playthings, or houses, chaises,

or any thing they wish for. But, papa, I wonder that the people who have bread and meat, and clothes, and tops, and balls, and all sorts of pretty or useful things, are so foolish as to give them for little bits of gold, or silver, or copper, which are of no use."

"No use! My dear, recollect that you have just said that they are of use, to buy any thing people want or wish for. Suppose you had two tops, and that you wanted to have a ball, instead of one of your tops; you might sell one of your tops, and with the money that would be paid to you for your top, you might buy a ball."

"But, papa, why could not I change one of my tops for a ball, without buying or selling, or having any thing to do with money?"

"Your top is worth more than a ball; however, you might, if you liked it, exchange your top for a ball; but it is not so easy to make exchanges of heavy and large things as of light and small things; you cannot carry large or heavy things—for instance, coals or cows—about with you, to exchange; and yet one man may have more coals, and another more cows, than he wants; and, if they wish to exchange these, then it is convenient to give money, which can readily be carried in the pocket."

Frank did not quite understand what his father meant; his father said that it was too difficult for him to comprehend, and that he

should only puzzle him, if he talked to him any more about it, yet.

"Papa," said Frank, looking a little mortified, "I am sorry that there are so many things that I cannot understand *yet*. What shall I do?"

"Attend to those things which you can understand, my dear boy; and then you will learn more and more, every day and every hour. Here are men reaping oats. Look at the sickle with which they are cutting down the oats. Did you ever see a sickle before?"

"Yes."

Frank remembered having seen sickles last autumn, when his mother took him to see some men reaping wheat; and he said he recollected that the bundles of the wheat, which the men bound together and set upright on their stalks, were called sheaves, and that the top of each separate stalk of wheat is called the ear.

His father bade him run and gather an ear of barley, which was growing in the next field, on the left hand, and also an ear of wheat, which was growing in a field on the right hand; and when Frank had gathered these, his father showed him the difference between oats, barley, and wheat. Frank knew that wheat is made into bread, and that barley and oats are sometimes made into bread, and that oats are eaten by horses

But there is another use of barley, which he did not know.

"Did you ever taste beer, Frank?"

"Yes, papa."

"Do you know of what beer is made?"

"I think my brother Edward told me that it is made of malt and hops; and he once, when the brewer was brewing, showed me some hops; he said that hops gave the bitter taste to beer. But, papa, I do not know what malt is."

"Malt is corn, that has been made to begin to grow again, and that is not suffered to grow a long time. Corn, you know, is a name for many kinds of grain; as wheat, barley, maize, oats, and rye."

"How do they make it *grow* a little?" said Frank.

"By wetting the grain and heaping it up, which makes it hot; then it swells, and the grain becomes soft; and, if it is opened, it is found to contain a kind of flour. I think I once gave you some malt to taste. Do you remember the taste of it, Frank?"

"Yes, papa; it has a sort of sweet taste."

"Well; when the malt has swelled, and is ready to burst, they stop its growth by taking it out of the heap, and spreading it upon the ground, and at last by putting it into a place that dries the corn, and prevents it from growing any more."

"Papa, you showed me such a place at Mr.



Crawford's, the maltster's, and he called it a kiln. And what do they do next to the malt?"

"They then brew it, and make beer of it."

"I know that. But how do they brew it, papa?"

"I cannot explain that to you, now, my dear; but the next time the brewer comes, I will take you into the brewhouse, and you may then see part of what is done to make beer of malt."

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Whilst Frank's father had been talking about malt and beer, they had walked through two or three fields, and they came to a neat farm house.

The man to whom the house belonged came out, and said, —

"How do you do, landlord? Madam, you are welcome. Will you walk in my yard, sir, and look at my new barn, which I am just now thatching?"

"Pray, papa, take me with you," said Frank; "for I want very much to know how to thatch the old garden house better."

His father took him to the yard. When they came there, Frank saw, lying on the ground, on one side of the yard, a great heap of straw, and on the other side he saw a bundle of hay, of which horses were eating. As he was passing between the heap of straw

and the bundle of hay, Frank heard his mother tell his father, that she once knew a young lady, who had lived till she was fourteen years old in the country, and yet who did not, at that age, know the difference between straw and hay.

Frank laughed, and said, "What a very ignorant young lady that must be, mamma! I know the difference between straw and hay perfectly; this on my right hand is straw, and this on my left hand is hay. Cows and horses eat hay, but they do not eat straw; beds are sometimes made of straw; and hats, and a great many things, are made of straw; and houses are thatched with straw, and not with hay. You see, mamma, I know a great deal more than that young lady, though she was fourteen.—How very old!"

"But all this time you have not told me, Frank, what hay is, and what straw is."

"Hay is grass dried, and straw is the stalks of wheat. You know, mamma, last autumn I saw the men threshing—I saw the corn that was threshed out of the ears; and what was left, after the corn was beat out, you told me was called chaff; and the stalks, mamma, you told me were to be called straw."

"Well remembered, Frank," said his father. "Perhaps, if the poor ignorant young lady of fourteen had, at your age, had as kind

a mother as you have, and had been told and shown all these things, she might have remembered them as you do. But, Frank, the stalks of wheat are not the only stalks that are called straw. The stalks of wheat are called wheat straw, but there are other kinds of straw. The stalks of oats, and of barley, and of rye, are all called straw."

"Which kind of straw is the best for thatching houses, papa?"

"Wheat straw, I believe," said his father.

By this time, they had come to the barn which the man was thatching. Frank looked up attentively a little while, and then said, —

"The man is so far above me, papa, that I cannot well see how he fastens on the straw. May I go up this ladder, papa?"

Frank pointed to a ladder which stood beside that on which the thatcher was at work. Frank's father made him no answer, till he had examined if the ladder was firmly fixed; and then he told Frank that he might go up.

"I will follow you, Frank," added he, "to take care of you, when you get to the top."

"No, papa, thank you, you need not; for I am not at all afraid, because I know so well how to go up and down a ladder."

Frank ran to the ladder, and a maid servant, who was milking a cow in the yard, cried out, —



“Master! master! dear young master! What are you about? Don’t go up the ladder, or you’ll break your pretty little legs.”

Frank laughed, and began to go up the ladder directly. He had been accustomed to go up and down a step ladder, which his father had in his library. Formerly, when he was a very little boy, he had not been allowed to go up that ladder, and he never had gone up it till his father gave him leave. And now, he was proud of being permitted to mount a ladder. So he went up; and when he was half way up, he turned back his

head to look at the maid, who had hid her face with her hands. Frank laughed more and more at her fright.

“Take care, Frank; mind what you are about; hold fast by the sides of the ladder. You are in much more danger now than you were in crossing the plank over the brook; for, if you miss a rung, (a step of the ladder,) you will fall and hurt yourself very much. There is no courage in being careless.”

Frank knew that his father told him the truth about *danger*, as well as about every thing else, and he always attended to what his father advised; therefore he left off laughing, and he took care to hold fast, and not to miss any rung of the ladder. He found that this ladder was much higher than that which he had been used to go up; his father was behind him; he reached the topmost rung safely, and his father put one of his arms round Frank, and held him, for his head grew a little giddy; and he had not been used to look down from such a height. In a few minutes, when his attention was fixed on what the thatcher was doing, he forgot this disagreeable feeling; and he was entertained by seeing the manner in which the house was thatched.

“Papa, I see that he puts on the straw quite differently from what I did, when I was trying to thatch the house in my garden.”

"Why, how did you put on the straw?"

"I put it in bundles upon sticks, that made the roof."

"What do you mean by bundles?"

"I took as much as I could grasp, or hold in my hand, and I put it on the wooden roof, not quite like steps, but one above another."

"And you found that the rain came in between every bundle, did not you?"

"I did, indeed; and I was very sorry; after all my pains, after I had thatched my house, the water came in, the first time there was a hard shower of rain."

"Yes; because you put the bundles of straw the wrong way. You see the thatcher does not lay handfuls of straw in steps, one above the other, as you did; but he begins at the eaves of the roof, near the wall, just at one end of the house, and he lays several bundles one beside the other."

"I understand you," said Frank. "I put them one above the other, like the steps of the ladder; he puts them beside each other, like the sides of the ladder."

"He fastens them down with bent twigs, which he calls *scollops*," said Frank's father. — "Or else, look, here is another way — he fastens the straw down with a rope made of straw, with which he actually sews the thatch down to the roof, with this long iron rod, which, you see, he uses like a needle."

"But, papa, you said that he begins at



the *eaves* of the house. What is the *eaves* ? ”

“ The *eaves* are that part of a roof that is nearest the wall. They are the lowest part of the roof, and the thatch hangs over the wall, to carry off the rain without its touching the wall. Here is a *scollop*. You see, it is sharpened at both ends, that it may stick in the roof. Observe the thatcher. He is going to put on the second row of thatch above the first.”

“ Yes ; I see that the lower part of the bundle, that he is now putting on, is put over the upper part of the bundles below it.”

“ Why does he do so ? ”

“ I do not know.”

“ Think a little, Frank.”

“ I do think, papa, —— but I cannot find it out.”

“ The rain would fall between the bottom of the row which he is now putting on, and the first row, if the bottom of the second did not lap over the top of the first ; and the rain would run in at the holes made by the scollops, if they were not covered with the second row of thatch.”

When Frank had seen and heard all that his father showed and told him about thatching, he went down the ladder as carefully as he had gone up it. As he passed through the farm yard with his father and mother, he stopped to look at some pretty hens and chick-



ens, that were picking up oats. Whilst Frank was looking at them, a large turkey cock came strutting up to him, making a great noise, spreading its black wings, stretching out its blue and red throat, and looking ready to fly at him. Frank started back, and had a great wish to run away; but his father, putting a stick into his hand, said, —

“ Frank, stand steady, my boy; drive him away with this stick. That’s right; drive him away.”

The turkey cock began to run away, turning back, from time to time, and making a terrible noise; but Frank pursued him, threatening him with the stick; and, as fast

as Frank came up to him, the turkey cock gobbled and ran away.

"Well done, Frank! you have fairly driven him away," said his father, shaking hands with him. "You see you can conquer him, and that he has not hurt you; now the next time a turkey cock attacks you, if you have a stick in your hand, you need not be afraid."

"My dear Frank," said his mother, "I am glad to see you are become so much stouter than you were. When you were a very little boy, and not nearly so strong as you are now, I remember we had a turkey cock in the yard which one day frightened you; and your father ordered that it should be sent away, that it might not frighten you again; for you were not then able to defend yourself."

"But I am now older, and am able to defend myself," cried Frank; "and willing too, mamma."

Frank marched on, in triumph, before his mother; and passed by the door of the chicken yard, looking proudly at the turkey cock, who dared not come out. Frank amused himself, during a great part of the way home, in imitating the strut and noise of this animal; and he frequently turned to his mother, asking her if *this* was not very like; and *this* still more like; and begging her to shut her eyes and listen, and tell

whether she could know his *gobble* from that of the real turkey cock.

Frank was tired, at last, of doing this; and his mother was tired of listening to him.

"Now, mamma, I have done being a turkey cock."

"Very well, my dear, I am glad of it. Let this woman, who seems to be in a hurry, pass by you, Frank," said his mother.

Frank looked behind him, and he saw a woman, with a milk-pail on her head, and another under her arm. He made way for her, and when she had passed, he said, —

"Mamma, that is the very same woman who was milking the cow in the farm yard, and who said to me, 'Master! master! don't go up the ladder, or you will break your pretty little legs.' Mamma, was not she foolish, to be so much frightened? I wonder how any body can be afraid to go up a ladder. What a coward she must be, poor woman!"

As Frank was saying this, they came to the narrow bridge; and, to Frank's surprise, he saw this woman run, without any appearance of fear, across the plank.

"With one pail on her head, and the other pail under her arm, too!" cried Frank, stopping short, and looking at her with astonishment. — "Mamma, can that be the same woman? Then she cannot be a coward!"

Not a coward about going over narrow bridges ; but she is a coward about going up a ladder, mamma."

"She is accustomed to go over this bridge, and she finds that she can do so without being hurt ; and you, Frank, have been accustomed to go up a ladder without being hurt."

"Yes, the ladder in papa's study I go up and down very often, every day. The first time I went up it, I was a little afraid ; and I remember clinging fast, and going very slowly. I see, mamma, that people learn not to be afraid of what they are accustomed to ; and I believe people can teach themselves not to be afraid."

As Frank finished speaking, he walked boldly over that bridge on which, but a short time before, he had scarcely dared to put his foot—that bridge which he had thought it impossible to cross.

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Frank's father was very careful always to keep his promises. He remembered that he had promised Frank, that, whenever the brewer came, he would let Frank see how beer was brewed. The brewer was now going to brew, and Frank's father called Frank, and took him into the brewhouse.

"What a very large vessel that is, papa !"

said Frank, pointing to a vessel which he saw in the brewhouse.

"It is large, compared with that which you have seen the cook use for boiling meat; but it is small, compared with the brewing pan, or boiler, used in a public brewery, where a great quantity of beer is brewed for numbers of people. We brew only the quantity that we want to drink ourselves."

"What is in the boiler, papa?"

"Water. Look at this large wooden vessel; this is called a vat. Into this the malt is put, and the water, that is boiled in the boiler, is poured into the vat, and mixed with the malt; and, after some other management, it becomes a liquor called *wort*. This is all you can see to-day."

The next day, his father called Frank again, and took him into the brewhouse, and showed him the *wort*, and bade him taste it; he tasted it, and found it sweet; but it had not the taste of beer, though it had something of the color of muddy beer. His father told him that hops must be mixed with the wort, before it could taste like beer. He showed Frank hops, and Frank tasted the hops, and found that they had a bitter taste.

"And is this all that is done to make beer, papa?"

"Not all; the wort, after the hops have been boiled in it, must be set to *work*, or *fer-*



*ment* ; and after it has fermented for some time, it becomes beer."

"What is, to ferment?" said Frank.

"I cannot explain it to you," answered his father. "But you shall see this wort when it is fermenting."

Then Frank's father desired the brewer would send and let him know, as soon as the beer should begin to ferment. The brewer did so some time afterward ; and Frank went to look at it. It was not now in the brew-house.

"You see, Frank," said his father, "that the liquor in these vessels is not like what you saw in the brewhouse. It is, however, the same liquor ; but it is now in a state of fermentation."

"It looks, indeed, quite different," said Frank ; "that liquor was of a dull brown color, and quite smooth on the surface ; this is all frothy, and of a muddy yellow and white color. It is full of bubbles ; some rising from below the surface, and others bursting."

"That froth is called yeast, or barm ; and it is by means of this yeast, or barm, that bread is made spongy and light. Bread made without barm is heavy, like unbaked paste."

"Papa, how is the beer made to work, or ferment, as it is called?"

"Some yeast, that was got from other beer, that was fermenting, was put into this

beer ; and that *set it a-working*, as it is called."

"How does it set it a-working, papa?"

"I do not know," answered his father.

"How did they get the yeast for the first beer that was made to ferment?"

"I do not know," answered his father.

"Why, papa, I thought you knew every thing."

"Indeed, my dear, I know very little ; and I never pretend to know more than I do. The older people grow, and the wiser they become, the more they feel that they are ignorant of a number of things. Then they become the more desirous to learn ; and, the more they learn, the more pleasure they feel in acquiring fresh knowledge."

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After he had seen and heard all that his father could show or tell him about the fermentation of beer, Frank went to read to his mother, as he usually did, at this hour, every morning.

"You have just been seeing how beer is made, Frank," said she ; "now, should you like to know how cider is made?"

"Very much, mamma."

"Here is a book, in which you can find an account of it."

She put into his hand the first volume of Sandford and Merton, open at the place

which gives an account of Harry and Tommy's visit to the farm house, where they saw a room full of apples, and where the farmer's wife described the manner in which she made cider of apple-juice.

Frank read all this to his mother, and it entertained him so much, that when he had finished it, he asked his mother to let him read some more of that book.

His mother said that she was afraid he was not yet able to understand all of it ; and that she advised him to *keep the pleasure* of reading it, till he should be able quite to understand it.

"O mamma ! here is the story of two dogs, Jowler and Keeper. Mamma ! just let me look at that, and a story of *the good-natured little boy* and *the ill-natured boy*. I am sure I can understand that, mamma ; and the story of the gentleman and the basket-maker, and Androcles and the lion. I will begin at the beginning, mamma, if you please ; and, if I find that I do not understand it, I will put it up again in your book-case, and *keep the pleasure*, as you say, till I am able quite to understand it."

Upon this condition, Frank's mother gave him leave to read Sandford and Merton. He sat down immediately on the carpet, and he read eagerly for some time, till he came to a long dialogue, and then he yawned. His mother sent him out to work in his garden.

She would not allow him to read much at a time, because she wished to prevent him from being tired of reading. He had the pleasure of reading a little of *Sandford and Merton* every day. He found that he understood a great deal of it ; and his mother told him, he might miss some parts. " You will read that book over again, I am sure, some time hence ; and then you will be able to understand it all ; and then you may read the parts which you now miss."

Frank was particularly delighted with the account of the house which Harry and Tommy built. And as soon as Frank got over the difficulty of the hard name, *Spitzbergen*, he liked the account of " the extraordinary adventures of the four Russian sailors, who were cast away on the desert island of East Spitzbergen."

" Mamma, I like this, because it is true," said Frank. " Mamma, I like books that tell me true things, and that teach me something."

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One morning, when Frank was going to put on his shoes, he found that there was a hole in the side of one of them ; so he put on another pair, and he ran with the shoe that had the hole in it to his mother, and asked her to have it mended for him. She said that she would send it to the shoemaker's.

“Mamma,” continued Frank, “I should like to go to the shoemaker’s; I should like to see how he mends my shoe, and how he makes new shoes. I understand something about it, from having seen that print of the shoemaker in the Book of Trades, and from having read the description; but I think I should understand it much better if I was to see a real shoemaker at work.”

“I think you would, my dear; and when I have leisure, I will take you to see a shoemaker at work.”

“Thank you, good mamma! And I should like to see every thing done that is shown in the prints of that book,” continued Frank. He ran for the book, and, turning over the leaves, “I should like, mamma, to see the trunkmaker, the wheelwright, the turner, the ropemaker, the papermaker, the book-binder, the brazier, the buttonmaker, the saddler, the glassblower, and — O mamma! the printer, and ——”

“Stop, stop, my dear Frank! I cannot show you all these; but, if you are not troublesome, I will show you any, which you can understand, whenever I have an opportunity, and when I have time. You know that I have a great many things to do, and cannot always attend to you, my little Frank.”

“I know that, mamma. But you have

time, have not you, to take me to the shoemaker's to-day?"

"Not to-day, my dear."

"But, mamma, will you tell me how paper is made?"

"Not now, my dear."

"Well, mamma, I will tell you how I intend to manage about my arbor."

"Not at present, my dear. Do not talk to me any more now; I am going to write a letter."

Frank went away, and employed himself, that he might not be troublesome, and that he might make himself happy.

The next day, his mother took him to the shoemaker's: he saw him at work—he saw the awl, with which the shoemaker makes holes in the sole of the shoe and in the leather, through which holes he puts the waxed thread, with which he sews them together; he saw that, instead of using needles, the shoemaker used hogs' bristles, which he fastened to the waxed thread with which he worked; so that the bristles served him as needles. He put the two ends of the thread in at opposite sides of the holes, and then drew the thread tight, by pulling each end at one and the same time; and, in doing this, he pushed out his elbows, and made an odd, jerking motion, which diverted Frank very much.



“Now I know the reason,” said Frank, “why, in the song which papa sings about the cobbler, it says, that he wanted elbow room —

‘There was a cobbler, who lived in the coomb,  
And all that he wanted was *elbow room*.’”

Frank saw, in the shoemaker’s shop, large pieces of leather of different colors — black, white, red, blue, green, and purple. He asked leave to look at these ; and one of the men in the shop, who was not busy, took out of a drawer some skins, as he called them, and spread them on the counter before Frank, who touched, and smelled, and looked at them, for some minutes, and then said, —

“I know that leather is the skin of animals — of horses, and dogs, and calves, and of some kind of goats, and of — of — I forget the name — seals.”

“Why, master !” said the shoemaker, looking up from his work, “many a little master, of your age, for whom I make shoes, does not know so much ; you are a very clever little gentleman.”

Frank colored, and was ashamed ; for he recollected the *flattering lady*, and he thought the shoemaker was flattering and laughing at him. He turned away, and said to the man who had showed him the skins, —

“Tell me, will *you*, how the skins of horses, and dogs, and goats, are made to look like this *leather* which I see before me ? I

know, pretty well, how the hair of the horses, and dogs, and calves, is got off, because I read an account of that in my Book of Trades. I know the currier, with a long knife, with two handles, scrapes it off. But I don't know, and I wish you would tell me, how you turn the skin into leather, and how you give it such beautiful colors."

"Master, I cannot tell you *that*. It is not our trade ; that is the business of the tanner and the leather-dresser. I buy the leather from them just as you see it. Please to sit down, master, that I may measure you for a pair of shoes."

Frank, finding that the shoemaker's man could not tell him any thing about tanning or dyeing, contented himself with observing the manner in which this man took measure of his foot. Frank looked at the stick, or ruler, which the shoemaker used. It was made to fold up and open, something like a carpenter's common ruler ; but there was hinged, at one end of it, a bit of brass about two inches long ; and this was hinged so, that it could be made to stand up, or shut down, as you please. This piece of brass the shoemaker turned up, and put behind Frank's heel, when he began to measure his foot, and he laid the ruler under the sole of Frank's foot. There was another piece of brass hinged in the same manner, which could be slid backwards and forwards upon the ruler ;

the shoemaker pushed this up to the end of Frank's foot, and then looked at divisions which were marked upon the ruler; and he saw the distance between the brass at the heel and the brass at the toe; and he knew what *size* Frank's shoe had ought to be, as to length. The breadth he measured by *spanning* the foot; that is, by putting his fingers round it in different places.

When the shoemaker had finished taking measure, he shut up his measuring-stick. Frank asked leave to look at it once more, because he had not observed exactly how it was fastened when shut. The shoemaker put it again into his hands, and he saw how one part of the brass notched into the other, so as to fasten both the parts of the ruler together, when shut.

The shoemaker then showed Frank some other things, which he wished to see, in his shop. He showed him a bootjack, for drawing boots off, and a wooden leg, which is put into boots, to stretch them; and he showed him the *lasts*, or moulds, on which shoes are made.

Wherever Frank went, people were generally ready to answer his questions, and to show him what he wanted to see, because he took care not to be troublesome, and he did not ask foolish questions. He sometimes found, however, that people could not spare time to show him things; and he often

found that he could not understand their manner of explaining.

Some days after Frank had been at the shoemaker's, as he was walking out in the evening, with his father and mother, he heard a dog barking at a distance.

"How far off, mamma, do you think that dog is?" said Frank.

"About a quarter of a mile, I should guess. I fancy it is White the tanner's dog."

"The tanner! Mamma, I wish he had not that barking dog."

"That barking dog is very useful to the tanner, and he will not do you any harm. That dog is always chained up in the day-time; he is let loose only at night, when he guards his master's property, and prevents any one from stealing the leather which the tanner leaves in his tan-pits."

"Then, mamma, if the dog is chained up, and cannot do me any harm, I wish you would be so good as to take me to see the tanner and the tan-pits: you know, the shoemaker told me that the tanner tans leather. — Mamma, will you go? Papa, will you go to the tanner's?"

"Yes, Frank, we will go with you," said his father. "I am glad to see that you are so desirous to acquire knowledge."

They walked across two or three fields, towards the tanner's house; and when they came near it, the barking of the dog was

heard very loud. But at the same time that Frank heard his loud barking, he also heard the rattling of the dog's chain; and he knew, therefore, that he was chained up, and could not do him any mischief. His father told Frank to take care, as he passed by this fierce dog, not to go within his reach — not to go within the length of his chain. Frank took care, and walked at a prudent distance. The tanner came out, and silenced his dog, and then Frank could hear and attend to what was said.

But, though he attended, he did not understand all that the tanner said; for the man spoke in a tone different from what Frank had been accustomed to hear.

"Here *bees* my tan-pits, master, if that *bees* what you're *axing* for. And all that *is*, as I knows about it, you see, master, is this, — that I *puts* the skins into one of these here pits, first-and-foremost, to cleanse it of the hair, like; and then I stretches it upon a *horse*, you see, and I scrapes off the hair."

"And does the horse stand still," said Frank, "while you are doing that?"

"O, bless you, master, it's a wooden horse I be thinking of!"

"O, I understand! But what is in this pit?"

"First-and-foremost, I puts it into this pit," said the tanner.

"First, he puts it into this pit," said

Frank's father, observing that Frank did not know what the man meant by first-and-foremost, which he pronounced very quickly, and like one word.

"Master, there is what we call lime water; and then I puts it into stronger lime water, to soak again; and then I takes it out, and hangs it to dry, and then again soaks it; and so on, till it is fit for the *tan-pit*, here," said the tanner, pointing to a pit.

"And what is in this pit?" said Frank.

"The bark, master — nothing in life, master, but the bark and water."

"The *bark*!" said Frank; "what do you mean by the bark?"

"I means the bark, that is ground and thrown into this here pit with water."

Frank looked to his father for explanation; and his father told him, that the bark, of which the tanner spoke, was the bark of oak-trees.

"This bark," continued his father, "contains something called *tannin*, which, after a length of time, gets into the pores, or openings, in the leather, and makes it hard. And after that, when the leather is dry, it does not let water easily pass through it; and then it is useful for making shoes and boots, and harness, and for covering trunks, and various other purposes."

"But what is that something called *tannin*, papa?" said Frank.



"I do not know," said his father. "But I know that it has a particular taste, which is called *astringent*; and that it makes leather hard, and fit to keep out water. Dip your finger into that pit, where you see bark and water, and taste the liquor, and then you will know what is meant by an astringent taste."

Frank dipped his finger into the tan-pit, and tasted the bark and water; and he understood what was meant by an astringent taste.

"Is this *all* that you can tell me, papa?"

"All that I can tell you at present, my dear. When you are able to understand it, you can read more on this subject in *Conversations on Chemistry*."

"But I do not see here any of the red or green colored, smooth, shining leathers, which I saw at the shoemaker's."

"No; they are not made at a common tanner's. They are colored, and made smooth and shining, as you saw them, at the leather-dresser's."

Frank's next wish was, to go to a leather-dresser, and to learn how the leather was made of these beautiful colors. The tanner said, that he always sent his leather, as soon as it was tanned, to a leather-dresser who lived in a town at twenty miles' distance from him, and from the place where Frank's father and mother lived.

They could not take him to the leather-

dresser's conveniently. In a book, a sort of dictionary, which his father lent to him, Frank afterwards looked for an account of the manner in which leather is dyed. He found that he could not understand it; so he turned his attention to something else, which he could understand.

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The next day, he passed by a nailer's forge, and he asked his father to take him in, and to let him see how nails were made. In the course of a few weeks afterwards, he saw several other things which entertained him.

Last year, when he had seen the sheep-shearing, and had been told, that the wool cut from the back of the sheep could be made into cloth for a coat, such as that which he wore, he had been curious to know how this could be done. His mother showed him how the wool is spun into woollen yarn; and this year, when he was able to understand it, his father showed him a loom, and explained to him the parts of the machine; and showed him how woollen yarn is woven into cloth, by means of a loom.

This summer, Frank saw several other things, about which he had been curious. His father showed him how books are printed, in a printing-press. And, some time afterwards, he took Frank to a glass-house, and let him see men making several things—

bottles, decanters, tumblers: he saw them pull the glass, when it was hot and soft, into various shapes; and blow air into it, and blow it out into any forms they pleased. This entertained him exceedingly.

But, whenever Frank saw any thing that entertained him much, he always wished that he had his brother Edward, or his cousin William, or his cousin Frederick or Charles to tell it to. They were gone home, and his brother was gone to school; and Frank wished that he had some companion, of nearly his own age, to talk to and to play with.

Frank had a little cousin Mary; and about this time little Mary, who was between five and six years old, was brought to his mother's house. Mary was dressed all in black when Frank first saw her; and she looked very melancholy. Frank went to his father, who was standing in another part of the room; and he whispered to his father, and asked why Mary was dressed in black, and why she looked so melancholy. His father answered, —

“Because her mother is dead.”

“Poor girl!” said Frank. “If my mother was dead, how sorry I should be! Poor little Mary! what will she do without a mother?”

“Mary is to live with us,” said his father; “your mother and I will take care of her,

and teach her, as well as we can ; and you will be kind to her, will you not, Frank ? ”

“ That I will, papa,” said Frank.

He ran directly for those of his playthings which he thought would please her the most. And he spread them before her. She looked at them, and smiled a little ; but she soon put them down again, and did not seem to be amused by them. Frank took her to his garden, and gathered for her those of his flowers which he liked the best ; but she did not seem to like them nearly as much as he did, or as much as he had expected she would. She said, —

“ Thank you ; but mamma had nicer flowers than these at home — I wish I was with mamma — I wish mamma could come back again to me.”

Frank knew that her mamma could not come back again to her ; but he did not say so, then, to Mary. He took her to look at the house which he was building ; and he showed her the sticks which his papa had given him for the roof, and he explained to her how he intended to roof it, and how he intended, afterwards, to thatch it ; he said, that they two could work at it together, and he asked her if she should like it.

She said, she believed that she should like it “ by and by, but not then.”

He asked her, “ what she meant by *by and by*.”

She said, "To-morrow, or some other day, but not to-day."

To-morrow came ; and little Mary, after she had slept all night, and after she had eaten some breakfast, and after she had become better acquainted with all the people in the house, who were strangers to her, began to look more cheerful ; and, by degrees, she talked a little more ; and, presently, she began to run about, and to play with Frank. He played with her at whatever she liked best ; he was her horse, for that was what she asked him to be ; and he put a bridle of pack-thread round his body, and let her drive him ; and he lent her his best whip, with which he let her whip him on as much as she pleased.

After Mary had been at Frank's home for a few days, she began to call it her home ; and she called his mother "mamma," and she seemed happy again. But Frank could not at all times play with her ; he had several other things to do ; and, when he did play with her, he did not choose always to play at the play which she liked best. Sometimes, at night, she wanted him to make a cat's cradle, or a paper boat, for her, when Frank wished to read an entertaining book ; and sometimes he wanted to work in his garden, or to go on roofing his house, when she wished him to be her horse, or to roll her in the wheelbarrow. Upon these occasions, Mary was some-

times a little cross ; and Frank was sometimes a little impatient.

Frank had now finished roofing his house, and he was beginning to thatch it in the manner he saw the thatcher ; he wanted Mary to help him ; he told her she must wait upon him, as he had seen the laborer wait upon the thatcher who thatched the barn. He said she should be his *straw man* ; and he showed her how to carry the straw ; and he charged her always to be ready when he cried out, —

“ More straw ! — more, man ! — more ! ”

For a little while, Mary served him well, and had the straw ready when he called, “ More straw ! ” But she was soon tired, and Frank called, —

“ More straw ! — more, man ! — more ! ” several times before she was ready. Frank grew angry, and said she was slow, and awkward, and lazy ; and she said, she was hot and tired, and that she would not be his *straw man* any longer. Frank tried to convince her that she was wrong ; and, to prove it to her, repeated what his father had told him about the division of labor.

“ You see,” said he, “ I am forced to come down the ladder every time I want straw ; I lose my time, and I cannot get on nearly so quickly, as if you carried it to me. When I go on doing one thing, and you doing another, to be ready for me, you cannot think how



well and quickly we get on : — that is dividing the labor — the division of labor — you understand ? ”

Mary did not understand. She said, “ I do not know any thing about that ; but I don’t like to be your *straw man* any longer, and I will not.”

Frank pushed her away, telling her that she might go wherever she pleased. She stood still, and began to cry. Then Frank was sorry he had been so angry with her ; and she dried up her tears when he told her so, and she said, she would be his *straw man* again, if he would not call, “ More straw ! — more, man ! ” so very fast ; and if he would not call her stupid or lazy.

To this Frank agreed ; and they went on again for some time, he thatching, and she carrying straw, and placing little bundles ready for him ; and they were very happy ; he working quickly, and she helping him nicely.

“ How much happier it is not to quarrel ! ” said little Mary. “ But now I am really quite tired — will you let me rest ? ”

“ Yes, and welcome ! ” said Frank ; “ though I am not in the least tired.”

He came down the ladder, and he went and looked for some wood strawberries, and brought them to her, and they ate them together very happily.

“I cut and you choose — that is fair, is not it, Mary?” said Frank.

Whenever any pie or pudding, fruit, cake, or any thing which they both liked to eat, was given to them, Frank was usually desired to divide it; and this he did with the most accurate justice. When he had divided it as well as he could, he always desired Mary to choose whichever piece she liked for herself; so that, if there was any advantage, she might have it. This was being just; but, besides being just, Frank was generous. Every thing that was given to him, to share with his little cousin, he always gave her a part, and often a larger or a better part than that which he kept for himself. Nobody knew this but Mary and himself; for he did not want to be praised for it; the pleasure he felt in doing it, and the pleasure he saw that he gave her, was quite enough.

But, though Frank was so good-natured to his little cousin, yet he had faults. He was passionate; and, sometimes, when he was in a passion, he did what he was afterwards very sorry for. Till little Mary came to his mother's, he had not been used to live with any one who was weaker and younger than himself.

When he found he was the strongest, he sometimes, in playing with little Mary, took advantage of his strength, to make her do

what he commanded her ; and, when he was impatient to get any thing from her, he now and then snatched or forced it rudely from her hand. One day, she had a new ball, which she held between both her hands, and she would not let Frank look at it ; she was half in play, and at first Frank was playing with her also ; but when she persisted in refusing to let him see it, he grew angry, and squeezed her hands, and twisted her wrist with violence, to make her open her hands. She, being in great pain, cried out so loudly that Frank's father, who was in the room over that in which they were, came down, to inquire what was the matter. Mary stopped crying the moment he appeared ; Frank looked ashamed, but he went forward to his father directly, and said, —

“ It was I who hurt her, papa — I squeezed her hands to make her give me this ball.”

“ You have hurt her, indeed !” said his father, looking at little Mary's wrist, which was very red, and was beginning to swell. “ O Frank !” continued his father, “ I thought you would use your strength to help, and not to hurt, those who are weaker than yourself.”

“ So I do, always, papa ; except she puts me in a passion.”

“ But the ball was my own ball,” said Mary ; “ and you had no right to take it from me.”

"I did not want to take it from you, Mary; I only wanted to look at it; and you began first to be cross — you were very cross."

"No, Frank, you were the *crossest*."

"You are both cross now, I think," said Frank's father; "and, since you cannot agree when you are together, you must be separated."

Then he sent them into different rooms, and they were not allowed to play together during the remainder of that day.

The next morning, at breakfast, Frank's father asked them whether they had been as happy yesterday as they usually had been; and they both answered, "No." Then he asked, —

"Do you like better to be together or to be separate?"

"We like a great deal better to be together," said Frank and Mary.

"Then, my dear children, take care and do not quarrel," said Frank's father; "for, whenever you quarrel, without asking any questions about who was cross, or crosser, or crossest, or who *began first*, I shall end your dispute at once by separating you. You, Frank, understand the nature and use of punishment; you know ——"

"Yes, papa, I know," interrupted Frank, "that it is — it is pain. — Papa, will you explain it? for, though I know it, I cannot say it in good words."

“Try to explain it in any words.”

“When you punish me, papa, you give me pain, or you take something from me which I like to have, or you hinder me from having something that I like, or from doing something that I like to do ——”

“Well, go on; when, and for what reason, do I give you pain, or prevent you from having pleasure?”

“When I have done something wrong, and because I have done something wrong.”

“And do I give you this pain of punishment because I like to give you pain, or for what purpose?”

“Not because you like to give me pain, I am sure, papa; but to cure me of my faults—to hinder me from doing wrong again.”

“And how will punishment cure you of your faults, or prevent you from doing wrong again?”

“You know, papa, I should be afraid to have the same punishment again, if I were to do the same wrong thing; and the pain, and the shame, of the punishment, make me remember. I remember them a great while; and the punishment comes into my head—that is, I think of it again—whenever I think of the wrong thing for which I was punished; and, if I was tempted to do the same thing again, just at the very time I should recollect the punishment, and I should not do it. I believe ——”

“Then, according to your description of it, just punishment is pain given to a person, who has done what is wrong, to prevent that person from doing wrong again.”

“Yes, papa; that is what I wanted to say.”

“And is there no other use in punishments, do you think, Frank?”

“O yes, papa! to prevent other people from doing wrong; because they see the person, who has done wrong, is punished; and, if they are sure that they shall have the same punishment if they do the same thing, they take care not to do it. I heard John, the gardener’s son, saying yesterday to his brother, that the boy, who robbed his garden last week, was taken and had been whipped; and that this would be a fine example for all the children in the village, and would hinder them from doing the same thing again.”

“Then, just punishment is pain given, to those who do wrong, to prevent them from doing that wrong again; and to prevent others from doing wrong.”

“Yes, papa,” said Frank; “but, papa, why do you tell me all this? why do you ask me these things?”

“Because, my dear son, now that you are become a reasonable creature, and that you can understand me, I wish, as much as possible, to explain to you the reasons for all I do in educating you. Brutes, who have no



sense, are governed by blows ; but human creatures, who can think and reason, can be governed, and can govern themselves, by considering what is right, and what makes them happy. I do not treat you as a brute, but as a reasonable creature ; and, on every occasion, I endeavor to explain to you what is right and wrong, and what is just and unjust."

"Thank you, papa," said Frank ; "I wish to be treated like a reasonable creature. Papa, may I say *one thing* ?"

"As many things as you please, my dear."

"But, papa, this *one thing* is about you ; and perhaps you will not like it. Papa, I do not think it is just to separate Mary and me, whenever we quarrel, without examining or inquiring which is in the wrong."

"When people quarrel, they generally are both in the wrong."

"But not always, papa ; and one is often more in the wrong than the other ; and it is not just that the one, who is least in the wrong, should be punished as much as the person who did the most wrong."

Here Frank paused, and the tears came into his eyes ; and, after a little struggle with himself, he added, —

"Now it is all over, papa, I must tell you that I was most to blame. I was the most in the wrong, in that quarrel which

little Mary and I had yesterday. It was I who hurt her, by squeezing her hand violently, and she only cried out ; and yet she was punished as much as I was."

"My dear, honest, just, generous boy!" said his father, putting his hand upon Frank's head, "act always, feel always, as you now do ; and when you have been wrong, always have candor and courage enough to acknowledge it."

Little Mary, who had gone away to her playthings, whilst they had been talking of what she did not understand, left her playthings, and came back, and stood beside Frank, looking up in his face, and listening eagerly when he said that he had been most to blame in their quarrel. And when his father praised him, Mary smiled, and her eyes sparkled with pleasure. After his father had done speaking, she said, —

"Frank is very good, to tell that he was the most wrong ; but I was a little wrong ; I cried more than I should have done, and a great deal louder, because I was angry."

"There is a good girl!" said Frank's father, stroking her head. "Now that is all over, let us think of the future. You say, Frank, that you do not think it just that you should be separated, when you quarrel, because that separation is the same punishment for both, when perhaps one only is to blame,

or one much more to blame than the other. Do I understand you? Do I state clearly what you mean?"

"Yes, papa — pretty well — not quite. I think the separating us is just enough, because, as you say, when we quarrel, we generally are both to blame more or less, and besides, when we are angry, we cannot have any pleasure in being together. So I give up that. But I think that, before you separate us, you or mamma should always inquire, and find out, which of us is most to blame, and exactly how much; and then the person, who has been the most wrong, will have the most shame; and that will make the punishment just as it should be."

"Well argued, my boy! This would be strictly just, as far as you two are concerned; but you must consider, also, what is just for your mother and for me."

"What do you mean, papa? I do not want to punish mamma or you — you do not quarrel;" said Frank, laughing. "I do not wish to separate you, or to punish mamma or you, papa — I do not understand you."

"Listen to me, and perhaps I shall make you understand me. You say you do not want to punish me or your mother; and yet you would punish us both whenever you quarrelled, if we were obliged to give up our time, and to leave whatever we were doing,

that was agreeable to us, in order to settle which of you two was most to blame, in a dispute, perhaps, about a straw, or something of as little value. Now, suppose you two were to quarrel every hour —— ”

“ O sir ! ” interrupted little Mary, “ quarrel every hour ! — O, O, that is quite impossible. ”

“ But my father only says, *suppose*. We can suppose any thing, you know, ” said Frank. “ Well, *suppose*, papa —— ”

“ And suppose, Frank, that every hour it would require a quarter of an hour of your mother’s time or mine to listen to both, and settle which was most to blame —— ”

“ A quarter of an hour ! that is a great deal too much time to allow. ”

“ We have been talking now, Frank, above quarter of an hour, I think. ”

Indeed ! I never should have guessed that ! ”

“ Should not you ? When people are much interested about any thing, they talk on a great while, without considering how time passes. ”

“ That is true. Well, allow a quarter of an hour each quarrel, and one every hour, ” said Frank.

“ And count twelve hours as a day. Then twelve quarters of an hour, Mary, how many whole hours will that make ? ”

Mary answered, after thinking a little while, “ I don’t know. ”

Frank answered, "Three hours."

"So, three whole hours, Frank, your mother or I must, according to your plan, give up every day, to settling your quarrels."

"That would be too much, really!" said Frank. "But this is only arguing on your *suppose*, papa."

"Well, state that you quarrel only once a day; tell me why your mother or I should be punished by taking up our time disagreeably in settling your little disputes, provided any other manner of settling them would succeed as well. Be just to us, Frank, as well as to yourself and to Mary."

"I will, papa — I will be just to you. I acknowledge we should not take up your time disagreeably, in settling our disputes, *if* they could be settled as well any other way. but all depends upon that *if*. You will acknowledge *that*, father."

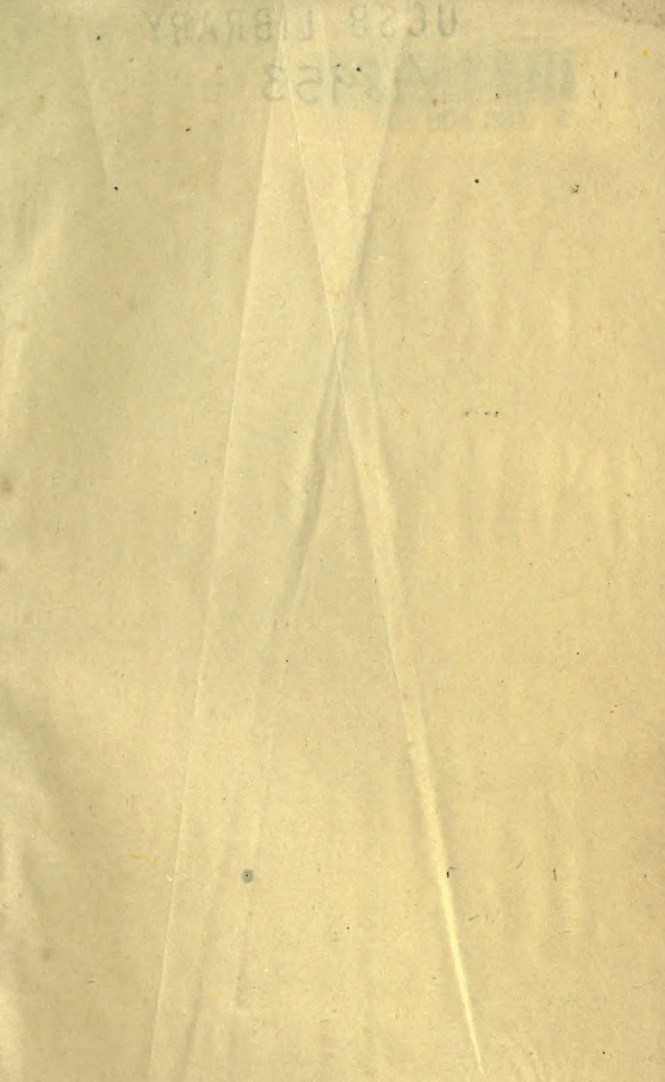
"I do acknowledge it, son. This question can be decided, then, only by experience — by trying whether the fact is so or not. Let us try my way, if you please, for one month; and, afterwards, if mine does not succeed, I will try yours."











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